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THE DOCTOR AND THE FACTORY

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NEW YORK

Some time ago the name of this section was changed from Preventive Medicine and Public Health so as to include Industrial Medicine. The resulting title may seem somewhat cumbersome, but it is significant and gratifying that the American Medical Association, recognizing the true relationship of industrial medicine to the other divisions of medical science, identified it as properly belonging in this section.

If one glances over a list of the sections of the Association, it becomes apparent that most of these are concerned with the individual as such and are differentiated largely on a basis of anatomic structure. The public health section centers its energy on the group and the interrelationship of the units of a group. Out of the realization that the close association of individuals is in itself a major factor in the etiology of disease has come the development of public health services, a coordinated application of the forces of preventive medicine. Two positive forces come into play as disease producers: first, the mass contact of individuals; second, the environmental conditions to which the group is subjected. Consideration of these two aspects of disease causation makes apparent the reasonableness of including industrial medicine in the public health section.

The entries are not all on the debit side of the ledger. Although the association of individuals in a closely knit organization, such as a battleship, a mine or a factory, carries with it in each instance hazards of sickness and injury, it also affords opportunities for applying the principles of preventive medicine with all the advantages that accrue to mass action. In no place, with the possible exception of the school, are these opportunities greater than in industry.

There are 40,000,000 wage earners in this country operating mines, railways, factories and mercantile and financial establishments; they form the most important section of the population. The nature and often the location of the particular establishment in which they work define the hazards to which they may be subjected. Many industries have specific occupational hazards inherent in the business itself; few are free from some hazard of either a general or a specific nature. The rapidity with which industry has developed, its staggering size and the number and complexity of its processes have left us, as physicians, lagging far in the rear of this extraordinary progress. We have an inadequate knowledge of the prevalence and nature of occupational diseases and of the extent to which environmental conditions in industry adversely affect health. The hazard of accidents is well understood and efficiently controlled; the reverse is true of the hazard of illness.

The physician who serves industry, if he is to make the best of the opportunities that confront him, must bring to his task a specialized training that he does not get in the regular medical course. The army and the navy require that candidates for their medical corps take courses of instruction which enable them to cope with those conditions peculiar to their respective services. The United States Public Health Service conducts classes at the Hygienic Laboratory to prepare the medical officer to meet the serious responsibilities involved in administering the functions of that service.

But industry, whose employees, every working day of the year, are subjected to a variety and intensity of conditions that are beyond the bounds of any one man's knowledge, is still the stepchild of medicine.

In industry one still finds, all too frequently, physicians who have no real appreciation of the nature and effect of the working conditions that surround the employees under their care; who have only an imperfect conception of the pathology, symptoms, treatment or prevention of the specific occupational diseases incident to the processes in the establishment which they serve.

It is true that there are to be found able and experienced industrial physicians competent to deal with any situation which may confront them. They owe their proficiency to years of experience and to the possession of active and inquisitive minds. All honor to them. But in the majority there is lacking the element of adequate preparation for their task without which few can hope to succeed, a condition of affairs which must give some concern to the thoughtful and which would not be looked on with complacence in other branches of medicine.

SPECIAL QUALIFICATIONS OF THE INDUSTRIAL PHYSICIAN

The special knowledge that the physician practicing in industry should possess may be briefly summarized under the folowing headings:

Ventilation.—He should know what determines good ventilation and in any given situation be able to estimate and assess the three components of ventilation; namely, air temperature, air humidity and air movement. He should know the effects of the variations of these three components on the health of the individual and on his ability to work. In other words, he should be familiar with the important contribution to applied physiology in the field of ventilation worked out through the cooperative studies of the U. S. Bureau of Mines and the Society of Heating and Ventilating Engineers. He should be able to recognize when natural ventilation is

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 10, 1931.

inadequate and when artificial ventilation is indicated and, equally important, whether an artificial ventilation system is doing its work properly.

Atmospheric Pollution.—He should know the fumes and gases that may be present in the work places and what may be the results of exposure to them. He should have a fair comprehension of the pathologic effects, when inhaled, of various types of dust, especially those containing silica, and should be acquainted with approved methods of air analysis and of dust control. That is not to imply that the industrial physician should necessarily be able to take dust samples with an impinger or a konimeter or to make dust particle counts, but he should know when such procedures are advisable.

Illumination.—He should be able to measure the degree of illumination with a foot candle meter and to recognize glare when present. He should have some knowledge of the advantages and of the disadvantages of direct and of indirect illumination and of the intensity of illumination requisite for different kinds of work.

Occupational Poisons.—He should know the toxicology of the more common industrial poisons and, if he is employed by a firm manufacturing or handling poisonous substances such as chemicals or dyes, he should know the symptoms, diagnosis, treatment and prevention of every condition resulting from contact with the poisonous substance to which employees under his care are exposed.

Factory Sanitation.—He should be familiar with the provisions of the factory laws in his state relative to washing, toilet and other sanitary facilities, and should be able to advise his firm as to suitable types of equipment.

Vital Statistics.—To assemble, interpret and present the statistics of his department is a most important function of the industrial physician. In no respect is the average industrial medical department more lacking than in the failure to present in statistical form the results of the work done. In this regard the safety department shines by comparison. Elaborate statistical analyses of accidents are everywhere available but, by and large, similar information about illness is not to be had. Data showing the amount of time lost from work through illness, subdivided and classified by diagnoses, by age groups, by sex and color and by occupation, are essential both for the purpose of comparison with other industrial plants and the community in general and for intelligently directing efforts at prevention. Added emphasis is given to the conspicuous need of accurate data on industrial morbidity by the continued expansion of compensation laws for occupational diseases.

The industrial physician should also have some conception of the problems and methods of personnel management and should be sufficiently acquainted with the work carried on in the establishment to be able to correlate the physical condition of an employee with the job that he is to perform.

The total of these special qualifications may be summed up in the statement that the doctor in industry should be not only a physician but a hygienist as well. It is quite true that there are many physicians serving industry, possibly the majority of them, if we include part-time physicians, whose function is limited to meeting the requirements of compensation laws and whose professional activities are directed mainly toward the treatment of occupational injuries. Such practice, while limited in its scope, is necessary, is of great value, is honorable and dignified and is, in nearly all instances, the basis on which industrial medical service is established. Nevertheless, opportunity goes begging, and employers are becoming more and more roused to the advantages to be gained by linking industry and scientific medicine. I am quite convinced that at the present time the demand for skilled and comprehensive medical service in industry is in excess of what the medical profession is able to meet.

THE FUTURE OF INDUSTRIAL HYGIENE

There naturally arises a consideration of the facilities for securing special training in industrial hygiene. Letters of inquiry were sent to medical schools about a year ago and the replies indicated that the schools were awake to the needs of the situation and were endeavoring to meet them. While the questionnaire method carries with it the risk of inaccuracy, in this instance the results were sufficiently complete for the purpose. There are at least nine large and important medical schools in the United States and Canada which offer excellent courses in industrial hygiene. It is quite possible that there are other medical schools giving such courses that were not revealed by this inquiry; technical schools were not included. Not all of these nine schools give complete courses but, with one or two exceptions, lectures and laboratory work are coordinated with study and practice in industrial establishments; some of the courses are open to undergraduates. All this is very reassuring and reflects great credit on the medical schools. However, when the inquiry was pursued further to ascertain the number of persons availing themselves of this specialized instruction and the use made of the knowledge so gained, all feeling of complacence abruptly vanished. It was not possible to credit more than 100 persons annually to these industrial hygiene courses; of this number, less than half were physicians, the others being mostly candidates for the Ph.D. degree; and of those who were physicians, only a few later identified themselves with industry.

An irresistible force of whose workings in other fields there is at present a nation-wide demonstration—economic pressure—is beginning to apply itself to industrial health. Because accidental injury is more obvious, in both cause and effect, than illness and because it is also compensable, industry has applied scientific methods of accident prevention with notable success. The industrial worker loses on an average eight days a year from illness for a staggering total of more than 300,000,000 days a year. The realization is spreading that physical examinations properly followed up, accurate diagnosis and prompt as well as skilful medical attention can, by all the laws of common sense, materially decrease this burden of cost and misery. That much the intelligent industrialist understands; but in his endeavor to secure these benefits for his employees he is handicapped by indifference, misconception and misapprehension on the part sometimes of his own colleagues and sometimes of the medical profession, which has not offered the industrialist clearly thought out or constructive plans for meeting his needs.

Without trespassing on the prerogatives of the local practitioner, the industrial physician, through his intimate contact with the wage earner and by his opportunities for advice, guidance, supervision and education, has a contribution to make to the practice of medicine in his community.

A committee under the leadership of our distinguished ex-president, Dr. Wilbur, is delving into the

costs of medical care. Here is another manifestation of economic pressure, the physician himself a victim as well as his patient, which erects a barrier between modern medicine and the wage earner's family. I have no intention of discussing this phase of the subject except to point out that, in any scheme or plan which may be brought forward as a solution or partial solution of the present dissatisfaction, the industrial physician should be an integral factor.

Industry presents a legitimate demand for effective health administration in factory and workshop; in industry there is an opportunity for the practice of preventive medicine on a large scale and for far-reaching results, and one can visualize in this a stimulating and vitalizing element that can be infused into medical practice. The realization of these objectives will belong to the industrial physician who brings the requisite qualifications and a sympathetic understanding to his daily work and has a clear conception of his duties and responsibilities to his employing firm as well as to the community and to his fellow practitioners.

THE EFFECT OF HYPOTHYROIDISM ON GASTRIC AND INTESTINAL FUNCTION *

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In 1915 a woman came to the surgical service of the Johns Hopkins Hospital for resection of the colon, because of chronic and intractable constipation. Her history was an interesting one. In 1910, she had had an appendical attack followed by an operation for removal of the appendix. A year antedating that time, she had complained of headache in the morning, rather marked flushing and a tendency to gain weight. Two years before the appendectomy, she had noted a good deal of irritability of the intestinal tract and a tendency to diarrhea, having from five to ten stools daily. The diarrhea, however, had stopped, and she had been troubled with constipation for two months preceding the operation. She had had an acute attack of abdominal pain; the appendix was found gangrenous, but drainage was not required. The patient had a slow recovery and her weight, which previous to the operation had varied between 150 and 160 pounds (68 and 72.6 Kg.), dropped to between 120 and 140 pounds (54.4 and 63.5 Kg.). Since that time the patient had had attacks which had been regarded, probably correctly, as attacks of partial obstruction, with marked pain and intractable constipation. She had been given all kinds of medication—oil injections, high enemas, massage, with every known laxative and purgative—and had been to many cures but had found no relief, the attacks often disappearing for several months but always reappearing and constipation being constant. There was a great deal of distention and general discomfort in addition to the constipation, which did not yield to any measures. Roentgenograms showed an atonic colon with what were regarded as adhesions in the lower right quadrant. Frequently the patient went as long as nine days without a bowel movement.

Physical examination showed nothing of great moment. The patient was markedly overweight, weighing 205 pounds (93 Kg.), and her inability to prevent this increase of weight, notwithstanding the restricted diet, was one of her major complaints. In one year she gained 50 pounds (22.7 Kg.), though she had lost weight occasionally with the attacks of apparent obstruction, always, however, to regain it after they were over. In one of the most intractable attacks, 48 quarts of water was used in irrigation before even partial relief was obtained, and in several attacks, morphine had to be used to control the pain. The patient seemed somewhat apathetic and, when definitely pressed, said that she had felt somewhat sluggish mentally and did not think her memory was quite as good as formerly. These symptoms she herself had attributed to autointoxication resulting from constipation. The thyroid was not palpable; the heart and lungs were normal; the skin was dry, as was the hair, and this condition the patient had noted for some little time. The abdominal examination showed nothing but a scar on the lower right quadrant, a liver which was not enlarged, and a diffuse slight tenderness over the whole abdomen, with a great deal of colonic stasis. Examination of the pelvis gave negative results. The patient's menstrual periods had been normal. The blood pressure was 140 systolic and 90 diastolic.

The laboratory examinations showed nothing of any special moment except that the temperature, on one or two occasions, dropped below 96, the average during this examination being 97.5 F. The pulse was approximately normal. The test meal showed free acid, 6, and total acid, 12. The red blood cells and the hemoglobin were normal; there were 10,000 leukocytes. The stool was absolutely negative microscopically and macroscopically, and there was no occult blood.

The last roentgen examination showed a cowhorn stomach pulled over to the right, the pylorus in the gallbladder region and the stomach empty in five hours; apparently there was no delay in the barium column reaching the various portions of the colon.

The patient's past history was rather irrelevant. She had had malaria at 14; she had had absolutely no headache until the onset of the present illness, and the appetite and digestion both had been good before the present illness. The bowels had been regular without medication until then. She had two children, the younger of whom was now 11 years old, and there had been no miscarriages.

The patient had been told that resection of the colon was the only possible means of relief and that she had marked partial obstruction in the lower right quadrant. She herself was so convinced that this was the only course to pursue that she insisted on the operation being done at once. There were certain features in the case so interesting, however, and so suggestive of hypothyroidism and myxedema—the slight mental sluggishness, the dryness of the skin and hair, the obesity and inability to reduce on a restricted diet, and the tendency to low temperature—that the patient was persuaded to postpone the operation for three days (this, of course, was before the days of basal metabolic readings and it was necessary to depend on the analysis of the symptoms and signs for making the diagnosis).

The patient was started on 2 grains (0.13 Gm.) of thyroid extract three times daily. In twenty-four hours she began to have normal bowel movements, and this has continued to the present time. Obviously, she did not have the operation; she has been kept on thyroid extract, from 3 to 6 grains (0.2 to 0.4 Gm.) daily, since that time; when the ingestion of thyroid has been discontinued, the basal reading always shows well below normal, and it has been possible to make her reach her ideal weight and hold it, and regain her mental as well as her physical activity. She has had no further obstructive attacks, notwithstanding the fact that, in all probability, she had a partial obstruction in the lower right quadrant following the appendectomy.

The case was so extremely interesting that it led me to make careful basal metabolic readings when this method of determining thyroid function came into vogue, to ascertain whether unrecognized hypothyroidism played a rôle in certain cases of intractable constipation. In 1926, I had made well over 200 readings in 156 cases, all done with the most meticulous care and practically all chosen from the group of middle aged women in the later forties or the early fifties, whose main complaint was constipation but who complained of such other minor symptoms as, frequently, increase of weight and, sometimes, slight mental sluggishness. All complained of constipation. Sixty-four

* Read before the Section on Gastro-Enterology and Proctology at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

of these cases gave readings within normal limits; that is, from minus 10 to plus 10 per cent; ten gave readings of more than plus 10 per cent and, surprisingly, eighty-two of less than minus 10 per cent, and of these eighty-two, thirty-two gave readings of less than minus 20 per cent; of the latter group, ten patients were males and twenty-three females; twenty-five were between 40 and 60 years of age. In this group, complaints were perhaps more marked than in the group giving higher readings; there was a greater tendency to fatigue, more complaints of mental dulness, some complaints of dryness of the skin and lack of sweating, and some of arthritis, and all the patients had been told or believed that they had intestinal toxemia.

In all but six, constipation was extremely marked. Nine of the thirty-two had intractable constitpation of many years' standing; in sixteen of the thirty-two cases the appendix had been removed without benefit. By fluoroscopic study the position of the stomach and colon was shown to be essentially normal in two thirds of the cases; in one third there were varying degrees of ptosis, and in this group the test meal readings by the Ewald method varied from achylia to hyperacidity, the average being a slight subacidity.

From the study of these cases, I came to the following conclusions: 1. In a certain number of the cases of chronic constipation of middle life, especially in women of the obese type, there is a distinct tendency toward a lowered basal metabolic rate. It seems possible that menopausal changes may play a rôle in this and that regressive changes in the thyroid may accompany similar changes in the ovaries.

2. There are a few cases of intractable constipation in which the strikingly low basal metabolic readings and the brilliant success of thyroid extract therapy would seem to indicate that these are true cases of hypothyroidism or myxedema, usually unrecognized or barely suggested, as the intractable constipation may be the most striking and sometimes apparently the only symptom of the condition.

3. Hypothyroidism and mild myxedema are more common than is usually supposed, if one can judge by basal metabolic readings and the result of the thyroid extract treatment. It is most important that that large group of patients with chronic constipation should have a far more careful study and a more complete physical examination, including a basal metabolic reading, as I feel sure that in a certain proportion of these cases the fundamental causative factor is an unrecognized hypothyroidism.[1]

In a recent small series of thirty-four cases with readings of minus 10 per cent or below, I have tried to note the condition of the appetite, the gastric digestion and the motor function from fluoroscopic studies, and have compared them with thirty-five cases with normal basal readings. There was not a very striking difference; change of appetite, gastric dyspepsia, constipation and motor disturbances are so common and are due to such a variety of causes, mostly functional, that this was not altogether an unexpected finding.

In the cases with low basal readings, the appetite was poor in only about half the patients; the gastric digestion was poor in twenty-seven, though the disturbance was only slight in seventeen of these. Constipation was a striking factor in eighteen of the cases, while from fluoroscopic studies the motor function appeared sluggish, by these means of determination, in only eleven of the cases, these figures being possibly higher, though not markedly so, than in the thirty-five cases with normal basal readings. For instance, the appetite was indefinite or poor in nine of these cases; gastric digestion was disturbed in twenty-eight; constipation was practically as frequent, and obviously due to other causes, while the reading as regards motor function was approximately the same.

In other words, while, unquestionably, hypothyroidism either recognized or unrecognized plays a distinct part in bringing about constipation as one of its symptoms and possibly in various other motor and sensory disturbances of the digestive tract, nevertheless there are so many other factors that can bring about exactly the same symptoms that the reverse is obviously not true.

As regards the effect of diminution in basal readings on secretory function, I have studied, in all, eighty-six cases: forty-five normal cases; that is, cases coming between plus 10 and minus 10, and thirty-one cases with moderate lowerings of the reading; that is, between minus 10 and minus 20, and ten with readings lower than minus 20. The normal patients were those who reported with various digestive symptoms and on whom, for one reason or another, I thought it wise to do a basal test. They were patients with vague digestive complaints and with no organic lesion, and could probably be regarded as the average type of patient coming with mild digestive complaints to a physician's office. The only test we made was the ordinary Ewald test, with one slice of bread and a glass of water, the extraction being made in between forty-five and sixty minutes.

In the forty-five cases of the first group, that is, the normal group, the average free acid was 36.3 and the average total acid 55. There were two cases of the forty-five that presented an achlorhydria, free acid, 0, and total acid, 14, in each case. The others showed a low acidity in a few cases, hypo-acidity in a few and hyperacidity in a few, the majority, however, falling within normal limits. The average, of course, is normal.

In the second group, that is, the cases between minus 10 and minus 20, thirty-one cases in all, the average free acid was 35.5, the average total acid 53.5; in other words, practically identically the same average readings as in the group of normal basal readings. In these thirty-one patients there were some who had an achlorhydria, possibly a few more who had subacidity but, at the same time, more that had hyperacidity, so that the average reading was the same as in the normal group.

In the ten cases with readings less than minus 20, the average of the free acidity was 15.4, the total acidity 32; in other words, rather strikingly low readings; and in this series of ten cases, not less than four showed achlorhydria; three with free acid of 0 and total of 12; one with free acid of 0 and total of 7; that is, there was undoubtedly a tendency toward lowered acidity well below the low normal readings and with a distinct tendency toward achlorhydria. No case in this series of ten gave a hyperacid reading; three gave readings within normal limits, three with subacidity and four with achlorhydria.

SUMMARY

From the study of this group of cases with lowered basal metabolic readings, a few cases of frank myxedema or at least of the *forme fruste*, and a number

1. Brown, T. R.: Tr. A. Am. Phys. **41**: 162, 1926.

of cases with readings lower than is usually regarded as a low normal reading, I think that the following conclusions are justified:

1. There is no characteristic gastro-intestinal picture presented by this group of cases, the digestive symptoms, gastric or intestinal, being purely functional in nature and not at all different from those encountered in a variety of other conditions.

2. It is evident, however, that hypothyroidism, especially if the readings are very low, plays a considerable part in certain cases of intractable constipation not corrected by the usual means, which are not infrequently observed in women in the late forties or fifties; the incidence of hypothyroidism in such cases is shown by the marked success in regard to these symptoms under proper dosage of thyroid extract. As regards the gastric secretory condition in those cases with relatively slight basal reductions, that is, with readings between minus 10 and minus 20, the readings are quite normal, and there is no difference between these readings and those obtained in normal individuals; that is, those with readings from minus 10 to plus 10. On the other hand, in the cases with very low readings, minus 20 and below, there was a marked tendency to gastric subacidity, a considerable portion of the cases presenting achlorhydria.

3. In the cases of intractable constipation, especially in women in the forties and fifties, it is advisable to consider the possibility of an unrecognized hypothyroidism playing a part in the picture, which can be relatively easily determined by careful basal metabolic readings and by the effect of therapy with thyroid extract if the readings are low.

12 East Eager Street.

MASKED GASTRO-INTESTINAL HYPERTHYROIDISM

REPORT OF THIRTY-FOUR CASES *

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While the picture of a typical case of toxic thyroid has always been fairly clear, it is only during the past several years that I have appreciated the fact that the thyroid can play such an important part in the production of gastro-intestinal symptoms without giving the usual thyroid syndrome and without demonstrable enlargement of the gland.

A basal metabolism machine was installed principally to detect subsecretion in cases of obesity. It has lately become one of the most valuable parts of the equipment in the diagnosis of diseases of the digestive tract. During the last three years, I have had thirty-four patients coming for gastro-intestinal diagnosis, the cause of whose symptoms was proved to be the thyroid, in masked form, so that in many instances the thyroid was not suspected at first examination. Cases of frank toxic thyroid are not included in this series. When it is considered that these thirty-four cases were recognized in a period of three years, after attention was focused on the condition largely by having a case in my own family, it is a cause of intense chagrin to realize how many diagnoses have been missed in the last twenty years.

* Read before the Section on Gastro-Enterology and Proctology at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

Several articles have appeared on masked hyperthyroidism but have featured the circulatory system more than the digestive, so that an analysis of the thirty-four cases in the series was undertaken. As has been noted, they were all more or less hidden cases, as in twenty-one there was no evidence of enlargement, firmness or fulness in the thyroid region. In thirteen there was slight change, as evidenced by fulness in some instances, and in others by firmness or slight enlargement which could barely be noted. One patient had previously had the left lobe removed (table 1). In seven cases the condition was not suspected at first examination; in six, it was barely suspected; in twenty-one, suspicion was directed toward the thyroid at the time of examination and subsequently proved (table 1). There were six men and twenty-eight women in the series, with ages ranging from 20 to 65, and an average of 38 years (table 1). All the cases were checked for correctness of diagnosis by basal metabolic rate and rechecked by the therapeutic test in their response to compound solution of iodine (Lugol's solution) or roentgen therapy or both. None came to operation, as did a number of frank cases with manifest enlargement of the gland, seen during the same period. The basal metabolic rate varied from a low of plus 14 to a high of plus 112, with an average of 45.8 per cent. In a number of cases, tests were repeated during treatment, with no instance of the rate failing to improve (table 1).

TABLE 1.—*Analysis of Thirty-Four Cases of Masked Gastro-Intestinal Hyperthyroidism*

Sex	6 males	28 females
Age	Youngest	20 years
	Oldest	65 years
	Average	38 years
Struma	No evident enlargement	21
	Slight change (fulness, firmness, slight enlargement)	13
	Previous operation	1
Condition suspected at first	No	7
	Yes	21
	Barely	6
Basal metabolic rate	Lowest	+14
	Highest	+112
	Average	+45.8

The response to the therapeutic test was striking in proving the correctness of the diagnosis, the efficacy of compound solution of iodine for temporary as well as for occasional permanent benefit, and the value of roentgen therapy when necessary. On a scale of zero, trace, plus and double plus, there were twenty-one cases showing double plus; ten cases, single plus and three cases, trace; there were no cases showing poor response. More will be considered later concerning the treatment.

TABLE 2.—*Response to Therapeutic Test*

Condition	Number of Cases
Failure to improve	0
Slight improvement	3
Moderate improvement	10
Marked improvement	21

An analysis of the presenting symptoms or chief complaints of the patients shows that "nervousness" occupied first place in eleven and general abdominal pain and cramps in ten; but if two cases presenting pain in the upper abdominal region, two, tight ache in the abdomen, one, misery in the stomach and one, hunger pain were grouped together as abdominal pain, the total would take first place with a count of sixteen. Nausea

and vomiting occurred in nine; palpitation in seven; weakness in seven; gas in five, and diarrhea in three cases. Other symptoms of lesser frequency may be noted in table 3.

While only two patients complained of loss of weight as the symptom which caused them sufficient anxiety to make them seek relief, questioning showed that

TABLE 3.—*Presenting Symptoms*

Nervousness	11
General abdominal pain and cramps	10
Upper abdominal pain	2
Tight ache in abdomen	2
Misery in stomach	1
Hunger pain	1
Nausea and vomiting	9
Palpitation	7
Weakness	7
Gas	5
Diarrhea	3
Faint feeling	2
Loss of weight	2
Constipation	2
Epigastric knot, heart pressure and smothering, depression, indigestion, dyspnea, excess peristalsis, epigastric fulness, migraine, dull feeling and headache, each	1

twenty-four had lost weight, varying from 2 to 40 pounds (0.9 to 18 Kg.), with an average for the entire series of 9⅘ pounds (4.4 Kg.) (table 4).

On examination, rapid pulse was one of the first things to attract attention. Only one patient had a pulse as low as 72; the highest was 140, and the average for the group was 102 beats per minute. The blood pressure observations were nearly as striking as those of the pulse. The lowest was 110 systolic with 62 diastolic, but the majority had elevated pressure and, while the average age has been noted as 38, the average blood pressure was 167 systolic and 90 diastolic (table 4).

The last of the important observations is tremor. Only two patients failed to show tremor at some time. Two varied from none to trace; six had slight tremor; eleven slight to moderate; eight moderate to quite marked, and four had very marked tremor (table 4).

It is interesting to note concomitant conditions found. They may be seen in detail in table 5, but it may be brought out that twenty of the thirty-four patients had anemia, nineteen indicanuria, ten ptosis and nine vago-

TABLE 4.—*Important Observations*

Weight loss	No	10
	Yes	24
	Range 2 to 40 pounds	
	Average loss, all, 9.6 pounds	
Blood pressure	Low	110 systolic and 62 diastolic
	High	182 systolic and 98 diastolic
	Average	167 systolic and 90 diastolic
	Average age	38 yr.
Pulse	Lowest	72
	Highest	140
	Average	102
Tremor	None	2
	None to trace	2
	Slight	7
	Slight to moderate	11
	Moderate	8
	Marked	4

tonia. The cause for the high proportion of anemias is not so easy to discover, but most of the other observations can be fitted into the proper place in the picture. Thus the vagotonia and irritable colon are what might be expected in the type of person with hyperthyroidism. It is not surprising that ten should have the condition diagnosed as nerve exhaustion. The loss of weight and the type of individual easily account for the ptosis. Most of the other observations are probably accidental, but it is interesting to note that the series contained six cases of actual or suspected gallbladder disease but only one of appendicitis and two of ulcer. It may be stated that rarely was great attention paid to the treatment of the coexisting conditions, which usually gave no concern after the thyroid disturbance was corrected (table 5).

In studying this series, some odds and ends of more or less diagnostic import have been developed and may be mentioned. Moist skin, especially of the palms, is frequently found but is not diagnostic. Not all patients are of excitable type, some being quite apathetic. Easy fatigue is marked but often after the thyroid has driven the individual to excessive activity. Fainting or faint feelings are frequent. Two symptoms, which I have noted but have never seen mentioned, are aching of the knees, especially after retiring, and the tendency frequently to drop small objects.

It should be remembered that tremor is most marked in the morning and, if it is not found on examination, the patient should be questioned as to its occurrence in the morning.

Lastly, it may be said that the thyroid disturbance may cause such general malfunction that the symptoms may be myriad and, in particular, pains, nausea and vomiting are so frequent that, once the diagnosis of hyperthyroidism is made, the examiner need not be

TABLE 5.—*Concomitant Conditions*

Anemia	20	Duodenal ulcer or suspect	2
Indicanuria	19	Appendicitis	1
Nerve exhaustion	10	Tonsil infection	1
Irritable colon	11	Eventration of diaphragm	1
Ptosis	10	Organic heart disease	1
Vagotonia	9	Achylia	1
Gallbladder or suspect	6	Cardiospasm	1
Migraine	3		

surprised if other conditions are not found to account for them. Several typical examples taken from the series may be presented in abstract:

CASE 1.—Mrs. L. M. D., aged 58, had never been robust but, after a death in the family a year before, had become very nervous. The chief complaints were intestinal gas, discomfort in the right side of the abdomen, frequency of urination, and palpitation of the heart. She seemed to be a typical chronic, nervous invalid. The thyroid did not appear enlarged but the pulse was 116 and the blood pressure 182 systolic and 74 diastolic. The basal metabolic rate was plus 75. Compound solution of iodine gave wonderful temporary improvement, but it required eleven roentgen treatments to effect the final cure, with a normal pulse, a fall in the basal metabolic rate to 27 and finally to 18, and relief of symptoms to such an extent that the patient's remark was "the sky is my limit."

CASE 2.—Miss M. E. T., aged 41, seen March 19, 1928, complained of epigastric soreness. She could not remember ever having had a good stomach but, for six months, sharp epigastric pains and dull soreness had been quite constant and without relation to food. The thyroid apparently was not enlarged; the pulse rate was 100; blood pressure was 130 systolic and 76 diastolic; there was no tremor. The thyroid was not suspected until some time later, when the pulse became more rapid and tremor developed. The basal metabolic rate was then found to be nearly plus 100. Response to compound solution of iodine was excellent. Thirteen roentgen treatments were necessitated. The basal metabolic rate fell to 65 and then to 35 after the eleventh exposure.

CASE 3.—Mrs. B. E. F., aged 29, was examined, Sept. 26, 1928. Her mother had been operated on for a toxic thyroid. The patient's usual weight was 155 pounds (70 Kg.) but her present weight was 130 pounds (59 Kg.). For three months she had noticed a full discomfort of pressure in the region of the heart. There were belching and nausea. Examination showed a slightly enlarged soft thyroid. There was no tremor, rapid pulse or elevation of blood pressure. There was slight

spasm at the cardia. A year later, she had epigastric soreness and pain; the pulse was rapid; there was a slight tremor and the basal metabolic rate was plus 38. Under 5 drops of compound solution of iodine, three times a day, the basal metabolic rate was gradually reduced, improvement was marked and continuous and, in December, 1929, the basal metabolic rate was plus 1. No further treatment has been necessary.

CASE 4.—Miss L. G., aged 42, consulted me, Sept. 19, 1929, complaining of discomfort and rolling in the abdomen. She had never weighed more than 98 pounds (44.5 Kg.) but had never been seriously ill. Ten years before, she had had her first attack of nervousness, rolling of gas and an uncomfortable feeling in the epigastrium, approaching a pain. After eating, a sensation of fulness in the throat would appear. She was ill in the first attack for two months. Since that time she had had recurring attacks, always being worse after fatigue. She was a nervous woman, weighing but 86 pounds (39 Kg.). The thyroid was apparently not enlarged, the pulse was 104; blood pressure, 176 systolic and 82 diastolic; there was considerable tremor. Otherwise, the examination gave negative results except for ptosis. The basal metabolic rate was plus 88. Under treatment with compound solution of iodine and with bromide there was a gain of 3 pounds (1.4 Kg.) in one week and with remarkable symptomatic improvement. Later, roentgen therapy was required.

A consideration of the results to date show that phenobarbital and compound solution of iodine as medication, with advice as to rest, diet, mental attitude and other therapeutic measures, were sufficient in twenty-three patients. The compound solution of iodine was not given in large amount and was discontinued gradually. A gain of 4 pounds (1.8 Kg.) in one week was not unusual.

Lastly, concerning the response to roentgen treatment, eleven of the thirty-four patients were treated by radiation. One stopped treatment after one exposure, one was not improved and nine were either greatly improved or apparently cured. These results may not be permanent, and only time will tell whether strains and stresses of life or infection will produce a recurrence or not. There are unquestionably some cases in which the factor of the time involved and the avoidance of the reactions, which are very apt to occur during the course of roentgen therapy, will make surgical intervention the choice in the beginning.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BROWN AND VERBRYCKE

DR. WALTER TIMME, New York: The thyroid gland has to do with the oxidation of the amino-acids of cell metabolism of every structure of the body; and by virtue of its activity these amino-acids are oxidized to carbon dioxide, water and ammonium carbonate, while the parathyroid finishes the process by converting the ammonium carbonate into urea. When the thyroid does not function properly, this process is accentuated, accelerated or else retarded; and when it is retarded, one has in every cell of every tissue of the body a retardation of activity and hence a diminution in its function, which diminution one sees as a gross symptom of the organ or tissue involved. On the other hand, when the thyroid is overactive, these end-products are so rapidly produced that the cell is relieved of the incubus of the ash produced by oxidation and functions more freely and rapidly. It is as though one fanned the fire by increasing the draft. That is what the overactivity of the thyroid produces and so every cell of every tissue is overactive functionally. This does not mean that its work is just as well carried out, but only that the tempo is changed. One other factor of importance is that there cannot be such a thing as a thyroid disturbance without there being at the same time a parathyroid difficulty that lies close to the thyroid disturbance; so that every perturbation of the thyroid connotes disturbance of the parathyroids as well as secondarily of the suprarenal cortex and finally of the anterior lobe of the pituitary. The effects of these coordinating glands are seen in the symptoms shown by some of the patients. Thus, one notices that some blood pressures were low, very few, the extreme ones, being quite high. Some patients had fainting attacks. Another group was exhilarated and keyed up, overstimulated; another group was depressed; a third group was always on a wave of excitability; while headache was also a prominent symptom. Further differentiations of the various glandular effects are shown. A deficient parathyroid activity produces spasticity because of its influence on calcium metabolism; a hyperparathyroid activity produces intense nausea and gastric distress; The vagotonic patients belong to the group in which the suprarenal cortex is not properly balanced by the thyroid and there is a lowered blood pressure and a vagus overinfluence rather than a sympathetic influence. One is not, therefore, dealing with a pure uniglandular disturbance but with multiglandular disturbances, probably arising from original thyroid dyscrasias. Compound solution of iodine with uncomplicated hyperthyroidism is excellent, but if the overactive thyroid contains adenomas, which one may not appreciate by palpation, the solution may do much harm. One has to watch the patients carefully and at the slightest signs of increase of symptoms one must stop the iodine. In roentgen treatment one has to be very careful because at the same time the parathyroids are irradiated and a definite permanent disturbance results. Furthermore, possible subsequent surgery on the thyroid is made more difficult because of resulting adhesions. Quinine hydrobromide and hypodermic injections of sodium cacodylate are of great service in combating the hyperthyroidism.

DR. MARTIN B. TINKER, Ithaca, N. Y.: It is surprising how many patients with goiter have digestive symptoms. For a number of years I have kept rather careful records of the digestive symptoms and in a paper read before the surgical section of this association nine years ago I called attention to the importance of persistent and grave intestinal symptoms in toxic goiter cases. Believing that this section would be interested to know the frequency with which these symptoms occur in a series of cases, I had my secretary tabulate the records of 4,127 goiter patients who had been operated on in recent years; 1,415, or over one third of the total number of patients recently coming, complained of digestive symptoms of more or less gravity. Over 10 per cent of these patients complained of persistent nausea and vomiting. Also over 10 per cent complained of persistent severe diarrhea. The nausea and vomiting and diarrhea were not controlled by usual methods of medication. For a long time I believed that among the most dangerous symptoms that one encounters in the toxic goiter cases are the digestive symptoms. A few of these patients die in spite of any treatment that has been suggested to date. Within three months I have sent two patients home who had persistent nausea and vomiting and who died fairly promptly. One of these was a sister-in-law of a physician, who had had excellent medical care and who had been seen in consultation by a number of men of a good deal of ability and some distinction. All these patients die if they are operated on without preparation. That, at least, is my experience. Most of these patients recover if they have suitable preparatory treatment, compound solution of iodine, rest, and careful attention to diet and general measures. It is probably true that the surgeon sees only the worst of these cases; but there are a number probably of the less serious cases in which relief is obtained from temporary measures such as Dr. Verbrycke has mentioned.

DR. M. G. WOHL, Philadelphia: I made a careful gastro-intestinal study on seven patients with hypothyroidism. Marked constipation was a prominent symptom in all of them; in addition they complained of other symptoms, such as tiredness and lack of endurance. The gastric analyses in six patients showed an absence of free hydrochloric acid in two, diminished hydrochloric acid in three, and no change in gastric acidity in one. Roentgen examination showed a ptosis of the stomach and colon in four. A striking example of the interrelationship of the thyroid gland and the gastro-intestinal tract was furnished by a patient who came in November, 1929, to the clinic at Temple University Hospital with symptoms of thyrotoxicosis, among which diarrhea was an outstanding complaint. Her basal rate was plus 76. The patient was operated on and nine

tenths of the thyroid was removed. Six months later she returned to the clinic complaining of obstinate constipation; she also presented other symptoms of myxedema. Her basal rate was now minus 29. The oral administration of desiccated thyroid brought about amelioration in the symptoms, and what impressed me most was the fact that the bowels responded to therapy long before the other symptoms of myxedema cleared. I agree with Dr. Brown that a critical analysis of all data amassed in a particular patient rather than a single laboratory observation should guide one in establishing the diagnosis of a gastro-intestinal disturbance of thyroid origin. There is an occasional patient especially of the obese type, as mentioned by Dr. Brown, who may have a normal or a low basal rate and yet will respond poorly to thyroid therapy. The checking of such a patient by determining the polarization capacity of the skin may yield results that would have contraindicated the use of thyroid. The polarization method was introduced by Professor Gildemeister of Leipzig and was made practical use of in thyroid disturbance by Lueg of Berlin. I have used this method concomitantly with the basal rate and found it useful as a check on the basal rate determination. The difficulty lies in getting an instrument that is simple in structure and will give uniform results.

DR. FRANK H. LAHEY, Boston: I have always been confused by the patients with low basal rates who are not benefited by thyroid extract. In my entire experience, I have seen but one patient with a metabolism of minus 25 or lower who did not have frank myxedema of such a character that it could be diagnosed clinically. There are patients, however, who have minus degrees of basal metabolism up to minus 25 but who do not have clinical evidence of myxedema and are not benefited by the administration of thyroid extract. There are literally thousands of patients today receiving thyroid extract because they have moderate minus degrees of basal metabolism, and a great majority of these patients are not benefited by the thyroid extract. It has been our experience at the Lahey Clinic that only those patients who show definite hypercholesterolemia, that is, a blood cholesterol of 200 or over, are the ones who will be benefited by thyroid extract; while those patients with a normal blood cholesterol, but moderate degrees of minus basal metabolism, will not be benefited by thyroid extract. This measure is one of real value because it permits the segregation of those patients with minus degrees of basal metabolism, in whom one can anticipate benefit from thyroid extract, from those other cases in which the administration of thyroid extract will not be of value.

DR. FRANK SMITHIES, Chicago: I want to comment on one phase brought out by Dr. Timme's discussion. We are dealing in a given case with an ever changing picture: from the initial appearance of the patient, his clinical picture is changing constantly with respect to the abnormality of the glands of internal secretion and their effect on the digestive function. I want to call attention to a paper probably forgotten, namely, that of Edmonds published some years ago, in which he emphasizes the functional antagonism existing between the suprarenals and the pancreas. In these instances of hyperthyroidism there is, as Dr. Timme mentioned, a speeding up of the function of many glands of internal secretion as well as that of many other organs. When the suprarenal is speeded up, there follows an acute hypersuprarenalism and, according to Edmond's studies, there occurs depression of pancreatic function. It is quite likely that some of the diarrheas in hyperthyroidism are in part due to the associated hypofunctioning of the pancreas due to speeding up of suprarenal function. Further, as diminution in function of the thyroid occurs, frequently there persists continuance of the overfunctioning of the suprarenal. This oversecretion of epinephrine leads to spasticity of the nonstriated muscle of the splanchnic areas, thus giving rise to marked spastic effects in the small and large bowels. Such spasticity may be of a degree to produce not only obstinate constipation but even actual functional obstruction. It has seemed that in some of these patients the diarrhea may be alleviated by the early administration of large doses of a good pancreatic preparation, combined with a suitable calcium formula. The spastic contractures yield to belladonna with a calcium preparation, with or without such a central depressant as chlorbutanol. Hyperthyroidism is accompanied by actual physical, anastomic, histologic and secretory damage to tissue which is more or less permanent. Even in patients who have had the best thyroid surgery, if there has been, for any considerable period of time, a thyroid intoxication, one is left with an individual who is physiologically incapacitated: liver, stomach and pancreatic secretions, stomach musculature, heart musculature, and the musculature of the small and large intestines. One should not promise too much to the patients who have their thyroids taken out. None of us know, even after a radical thyroid operation when only a little remains, what degree of thyroid hypersecretion is necessary to intoxicate an individual.

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: I wish to discuss a few practical points with respect to low basal metabolic rates which should be of interest to those of us who specialize in diseases of the digestive tract. There is a group of individuals with low rates (an average of minus 20, or less) whose symptoms are largely the result of a psychoneurosis or a constitutional inadequacy. As Dr. Lahey says, it is possible that blood cholesteral studies may help differentiate this group from the truly hypothyroid group. This group probably constitutes the majority, presenting functional gastric or intestinal disturbances, or both, and in whom the results of thyroid therapy are often, if not usually, disappointing. Treatment directed along the line of building up their general physical and nervous health, restoring them to a normal nutritional basis, and so on, is of the greatest importance. In a subdivision of this group, to which Dr. Plummer has frequently called attention, there is an associated achlorhydria; nervousness, fatigability, artistic temperament and low basal metabolic rate are in evidence. Some of these persons may have symptoms of chronic cholecystitis, but in the absence of typical colic and in the presence of a normally functioning gallbladder on cholecystographic examination and normal B bile microscopically one should be conservative in treatment. The actually hypothyroid or myxedematous group may have little or no gastric disturbances. Aside from constipation and evidence of impaired gastro-intestinal motor function occasionally, there are no unusual disturbances. Occasionally I see patients with hyperthyroidism in emergency consultation, especially the group without obvious exophthalmos or enlargement of the thyroid. In their crises they may exhibit attacks of marked vomiting or diarrhea, or both, which, offhand, might be erroneously construed as arising from pyloric obstruction, tabes or an acute surgical abdominal condition. The characteristic facies, flushed appearance, elevated pulse rate, warm, moist skin, tremor, and so on give ready insight as to the true underlying cause of their marked gastro-intestinal disturbances, and the proper therapy is instituted without delay. Finally, one must bear in mind that patients with hyperthyroidism may harbor organic lesions of the upper digestive tract, particularly ulcers of the stomach and duodenum. Robertson and Hargis, in their autopsy studies, have shown the high incidence of these lesions in patients dying of exophthalmic goiter or of toxic adenoma. In many cases the only symptom presented is that of hemorrhage. Crile has called attention to the high incidence of ulcers in such persons and has classified them as kinetic.

DR. THOMAS R. BROWN, Baltimore: Dr. Timme's calling attention to the intimate correlations of the different glands of the endocrine system is interesting; of course, the attack on the thyroid is because we can perhaps gage its abnormalities better than the others. From Dr. Lahey, as always, I have learned something new which I shall certainly use in my work. Perhaps to me the real motif of this discussion is that, after all, just as there is this close relationship between the glands of internal secretion and just as in the discussion internists, surgeons, endocrinologists and gastro-enterologists all took part, perhaps there is no such thing as a gastro-intestinal specialist and that the only safe one is he who while doing intensive work in this field has his real foundation firmly based on general clinical knowledge.

DR. J. RUSSELL VERBRYCKE, JR., Washington, D. C.: There is only one thing I want to say in closing and that is, I want Dr. Tinker to realize that I hold no brief for roentgen treatment in these cases. It is long and sometimes disappointing

and has a good many reactions in which the patient is sometimes worse, but I feel that it requires pretty nearly as much bravery for one to advise removal of a thyroid when he cannot demonstrate any enlargement as it does to take out a gallbladder in the face of a negative Graham test. That is why most of these patients were subjected to roentgen examination, which gave some remarkable results. Some patients have been converted from invalids, the opposite of the type that Dr. Brown presented, and transformed from these chronic, complaining people, to people who are able to do something.

LOCAL ANESTHESIA IN THE REDUCTION OF FRACTURES *

R. G. CAROTHERS, M.D.
CINCINNATI

The use of local anesthesia in the reduction of fractures is a subject that has caused no little comment within the last few years. This comment has been so diversified in character that a frank discussion of the matter, with a description of the technic, seems advisable at this time. Local anesthesia in fractures must not be confused with local anesthesia in other conditions requiring surgical intervention. One cannot compare the reduction of a fracture with the removal of an appendix or with the repair of a hernia. They are fundamentally different types of procedures. In the ordinary surgical operation, one first cuts tissue, then retracts, cuts farther, clamps and ties vessels, and lastly sews up. These procedures are painful and require either a general anesthetic, a nerve block or a complete infiltration of all tissues concerned, with the anesthetic solution. In fracture, however, the bulk of the trauma has occurred before the surgeon sees the case. The problem is not to cut or to sew but simply to manipulate the part until the injured tissues are restored to their normal relationship and then to apply splints or plaster to maintain this position.

It has been found that if a solution of 1 or 2 per cent procaine hydrochloride is injected into the hematoma, which is present in the majority of fresh fractures, the lacerated tissues, both bone tissue and others, will be bathed with procaine, eliminating pain. Pain having been eliminated, muscle spasm disappears and the manipulation for reduction of the fracture becomes not only painless but relatively simple. This is not a new procedure. Conway [1] of New York in 1885 did almost the same thing. He was surprised to find that he not only relieved pain but so reduced spasticity that he could manipulate the fragments as he wished. However, it remained for Lorenz Böhler, who spoke before this section last year, to develop further and to popularize this method.

Criticism of the method has been offered on the ground that introducing a needle through the skin and into the hematoma is, in theory at least, converting a simple fracture into a compound one. Further than this, the introduction of foreign material into the fracture area is deplored as nonsurgical. My experience, which covers 270 cases, has not led me to fear infection. My associates and I have had no infections in simple fractures and the infections in our compound fractures have been no more severe and no more frequent than under other methods of anesthesia. For two years now it has been our method of choice, and we have used it in almost all fractures of the long bones. We have not tried to use this method in fractures of the spine, ribs or pelvis or the bones of the head.

Occasionally one runs into a fracture so thoroughly impacted that there is no hematoma around it, and these cases present an entirely different problem. In all other fractures of the upper and lower extremities that we have encountered in the past two years we have used this method, except for an occasional case in which spinal anesthesia was used and two cases in which the patient refused to have this method applied.

TECHNIC

After the roentgenograms have been made the surgeon decides just where he had best introduce the needle and, at this point, paints with iodine an area about 18 mm. in diameter. With a fine needle a small wheal is made with procaine and a larger needle with a fairly heavy shaft of the necessary length is then applied to the syringe. My associates and I always use a 20 cc. Luer syringe. The needle is introduced toward the fracture, and the surgeon then feels around until he can easily withdraw blood into the syringe. He then introduces from 10 to 20 cc. of a 2 per cent solution of procaine, the amount depending on the age of the patient and the size of the limb. If more than one fracture is present, each one is so anesthetized. After a five minute interval the patient is ready for manipulation.

ADVANTAGES

No preliminary preparations are required, and a skilled assistant is not necessary. The patient can be, and usually is, quite cooperative and, as soon as the fracture has been splinted, the patient can be taken for a roentgen check up at once. If it is discovered that the reduction is not satisfactory, it can be done over again without further anesthetic, for the procaine remains effective for about an hour and a half. We do not like to finish with the anesthetic until we are sure, by means of a roentgen check-up, that our reduction is satisfactory. To check up with films is time consuming and, with a general anesthesia, difficult, but films are so much more satisfactory than the fluoroscope that we believe local anesthesia offers a decided advantage in this respect.

RESULTS

We now have 270 cases to report in which we have used this method. In 250, or 92.6 per cent of these cases, the anesthetic has been absolutely satisfactory in every way. Most of the patients were not given a preoperative narcotic or sedative, except a few who received moderate doses of morphine. The vast majority had not even this. In 18, or 6⅔ per cent, of our cases, the anesthetic was good, and we were able to proceed with a satisfactory reduction. Some of these eighteen patients complained of a little pain, and in some there was a slight amount of muscle spasm. Two of these patients had mild procaine shock. In none of our cases did we encounter infection that could in any way be attributed to the anesthetic. In only two cases of the 270 did we find it necessary to resort to another type of anesthesia. One of these was an ankle fracture with complete dislocation of the astragalus, backward and upward, and the other was a case of a fractured femur, in which we believe we got the

* Read before the Section on Orthopedic Surgery at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

1. Conway: New York M. J., December, 1885.

procaine into a vein rather than into the hematoma of the fracture.

In addition to its use in our own series, this method has been employed by house surgeons at the Cincinnati General and the Good Samaritan hospitals in well over 500 cases, with such excellent results that it has been made their method of choice.

409 Broadway.

ABSTRACT OF DISCUSSION

DR. JOHN A. CALDWELL, Cincinnati: In two cases in which I have used this method, out of about 600 introductions, I have seen procaine intoxication. It is a transient, disconcerting thing but does not seem to be at all serious. I have not infected any of these patients. In none of my cases has there been the slightest elevation of temperature or any sort of local reaction. As to the advantages it has over a general anesthetic, in the first place one has a conscious, cooperative patient. In the next place, if the reduction is not successful, it is an easy matter to repeat it. If one wants to repeat it within two hours, as a rule one can do it with the same anesthetization. If it is done the second or third day, there is not the same objection on the part of a patient that he ordinarily advances to a general anesthetic. If it is to be used in the fluoroscope room, one does not have the apprehension and worry that one ordinarily feels in using the fluoroscope with an anesthetized patient. Two experiences that I have had with it were particularly dramatic and showed especially the usefulness of it. One was a feeble old lady of 95 with a fracture of the neck of the femur, which was badly displaced and any attempt at the slightest movement would cause her pain. I had seen that at her home. The injection of procaine hydrochloride was made there. I injected 20 cc. down in the fracture and within fifteen minutes I could move her leg with perfect comfort. She was transported to the hospital and given such treatment as was necessary, without the slightest discomfort to her. Ordinarily a trip to a hospital with a patient of that sort would be agony. Another experience illustrates the absolute necessity after the injection of procaine, of waiting. Our custom is to wait ten minutes, that is, ten minutes by the clock, and that is different from ten minutes by guess. In injecting a Pott's fracture, the injection was made about both the tibia and the fibula. It was associated with posterior dislocation and I waited there ordinarily about five minutes, and on attempting to reduce I caused the woman considerable pain, but the ankle did slip back into place. While I was putting the plaster on and putting the leg in position, it slipped out again three different times and was reduced without pain or discomfort. A few minutes' longer wait would have given this patient a completely painless reduction.

DR. HARRY E. MOCK, Chicago: I have had patients who have had fractures and they were treated or reduced under general anesthesia and they were treated by the procaine hydrochloride injection method a few years later for a subsequent fracture, and the patients invariably have asked, "Why wasn't I treated this way in the first place?" They like the injection much better than the general anesthetic method. I think that one should be a little bit more careful in sterilizing the field when one is introducing a needle than one is tempted to be sometimes. The roentgen check up is one of the greatest advantages in fracture work. For years, following teachings of Dr. Halstead, with whom I was associated for a while, I reduced fractures under careful roentgen guidance. This was in the days when it was done under general anesthesia. After reduction of the fracture the patient was wheeled into the x-ray room and a roentgenogram was taken, and if it was not good, the patient was wheeled back to the plaster room and the anesthesia was continued. Further reduction was done and the patient was wheeled back for another roentgenogram, and this was continued until the reduction was satisfactory. In later years we did it by moving a good portable apparatus into the plaster room and taking the picture. It kept the patient sometimes under a long general anesthetic. Since I have been using local anesthesia in my fracture work, I have been getting better results because I am not rushed on account of the general anesthetic. I reduce the fracture, get the picture, and if it is not satisfactory make an adjustment and take another picture until I am satisfied that I have reduced it. I think that local anesthesia gives the greatest advantage for this roentgen check up of the fracture done immediately after reduction.

DR. ROBERT CAROTHERS, Cincinnati: In my own cases and the cases of Dr. Caldwell, which I have been allowed to follow, there have been no bad effects. They are now nearly a thousand, a number sufficient to form a basis on which to judge its safety. It is effective and, when once the technic is learned and followed carefully, there are practically no failures. The advantages are many, especially in children and old people who take general anesthetics badly. With little children the reduction of a broken arm can be made play and they return for a second cast, happy. In old people with hip fractures it is especially advantageous. I have treated many fractures, probably several thousand, and I know of nothing that has been given to the profession of more value in the treatment of fractures than local anesthesia, and, if I may be allowed to say so, the technic in other respects made popular by Dr. Böhler.

DR. RALPH G. CAROTHERS, Cincinnati: One reason I wanted to present this was that I have read many articles recently in which a different and unnecessary technic has been described. People have spoken of the distribution of the nerve supply to this or that part and how to anesthetize the periosteum, all of which is unnecessary. As I tried to point out, it is an internal wound which has been produced and once it is filled with solution of procaine hydrochloride, one has the proper anesthesia. I do not use a lot of iodine because a skin plaster is going to be put on; so I use just a little spot. The needle is picked up with a hemostat. Nothing is touched but the barrel of the syringe and one can certainly aim that at the middle of the iodine spot. I had the experience four times since school started last year of having broken arms in my own child and have used this method each time. The last time she called me up from school, without even telling her mother about it, and said, "Daddy, take me to the hospital. I have broken my arm again." The method was quite satisfactory all four times.

THE REGULATION OF PRODUCTION AND THE FUNCTION OF THE MALE SEX HORMONE*

CARL R. MOORE, PH.D.
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Attempts at therapeutic administration of the male hormone to man perhaps logically date from the unsubstantiated assertions of Brown-Séquard[1] that a glycerin-water extract of testicles injected subcutaneously is an effective agent in prolonging the productive period of a man's life—physical as well as mental. Berthold,[2] several years earlier, had clearly demonstrated that an internal secretion from a transplanted cock's testicle was the effective agent responsible for the maintenance of the masculine habitus and behavior.

Perhaps the chief methods employed to attempt a regulation of the amount of circulating hormone have been testis transplantation and vasoligation. Transplantation of testicular tissue, though carried on to some extent earlier, undoubtedly received its greatest stimulus from the work of Steinach[3] on rats and guinea-pigs. Since the publication of his results there

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* Many of the investigations referred to herein have been aided by a grant from the Committee on Research in Problems of Sex of the National Research Council: grant administered by Prof. F. R. Lillie.

1. Brown-Séquard, C. E.: Arch. de physiol. norm. et path. **21**: 651, 740, 1889.
2. Berthold: Arch. f. anat., physiol. u. wissenschaft Med. **42**: 1849.
3. Steinach, E.: Arch. f. d. ges. Physiol. (Pflüger's) **144**: 71, 1912; Zentralbl. f. Physiol. **27**: 717, 1913; Arch. f. Entwcklngsmechn. d. Organ. **42**: 307, 1916; **46**: 12, 1920.

have been many attempts to transplant into man testicular tissue that was obtained from human, ape, monkey, deer, goat and other mammalian donors. The basic idea has been that the transplant would grow, or if it did not grow it would, through autolysis, liberate an appreciable amount of male hormone, which in turn has been considered capable of dispelling evident signs of the wear and tear of age.

Vasoligation, or the occlusion of the ductus deferens —with or without actual transection—may again be traced to the work of Steinach [4] in 1920 for its modern reinstatement as a prophylactic for old age—real or imagined by patient or clinician. No heed was given to the results observed by workers almost a century earlier, such as that of Sir Astley Cooper,[5] wherein he noted that ductus deferens occlusion of six years' duration did not interfere with testicular function. Steinach's erroneous contentions that closure of the outlet passages from the testicle of the rat resulted in degeneration of the germinal tissues and a hypertrophy of interstitial cells, with a consequent overproduction of male hormone and a resultant rejuvenation, were adopted and applied to man. As late as 1925 one American surgeon reported results in 114 cases of human operations with alleged beneficial results for some score of ailments, included among which was arthritis, failing eyesight, sclerosis of the internal ear and mental depression.[6] A restudy of the effects of ductus deferens occlusion in five species of mammals in the zoology laboratory at the University of Chicago demonstrated clearly, first, that the testis is not thereby caused to lose its germinal producing capacities, and, secondly, that the interstitial tissue was not caused to hypertrophy.[7] Up to the present time there has been no indication that such an operation in any way modifies the rate of hormone secretion or is advantageous in any other respect aside from a sterilizing operation.[8]

The difficulties due to the lack of active preparations of the male hormone, or of means of detecting its effect over periods of reasonable experimental procedures, are fortunately now eliminated in part. The many attempts to extract the active substance secreted by the testicle were uniformly discouraging until McGee,[8] in Koch's Laboratory at the University of Chicago in 1927, obtained in the lipoid fraction of an extract of the bull's testicle a preparation that proved effective in stimulating the growth of the degenerate comb of the capon, a control exercised by the testicle in the normal cock. Koch and his students have extended the process of purification to the point at which a daily injection of 0.01 mg. of solid substance causes an appreciable growth of the capon comb.[10]

In a series of studies on the laboratory mammal (rats and guinea-pigs) we have succeeded in developing into a workable procedure some nine or ten different test methods for detecting the presence or absence of the male hormone. These have included the histologic and cytologic changes in the accessory reproductive organs, and the physiology of the seminal vesicles and prostate gland as detected by inducing an ejaculation by an electric current applied to the head of a guinea-pig. It is now possible to detect the loss of hormone, as by castration, within two to three days in the mammal as well as to determine by objective means the effectiveness of male hormone preparations. We have determined that the preparations of Koch and his students which stimulated the growth of the capon comb [11] serve as an effective substitute for the mammal testicle when they are administered by daily subcutaneous injections. We have thus been able by their administration to mammals (1) to prevent the development of all castration changes in the adult for an indefinite period; (2) to repair all castration damage even though of months' duration, and (3) to bring to maturity and the adult functional state male animals that were castrated before attaining puberty.[12] The success of the biochemists in obtaining effective preparations of the male hormone, and the development of effective and quickly applied procedures for determining its presence or absence in the organism (bird and mammal), unite in providing instruments with which real advances may be made in the study of the production and the function of the internal secretion of the testis.

Active preparations of the male hormone have now been obtained from several sources by Koch and his students, and independently in other laboratories of this and other countries. The test methods in all cases have involved either the growth of the capon comb or modifications of the accessory reproductive organs in the laboratory mammal. Thus, substances giving the reactions of the male hormone have been prepared from extracts of mammal testes (bull, boar, ram, goat [13]), from the urine of adult man,[14] from the blood of males,[15] from the testicles of fetal calves,[16] from the urine of pregnant and nonpregnant women [17] and from the blossoms of the pussy willow.[18] It was not detected in the urine from boys under the age of 10 or from young bull calves,[16] nor was it recovered from tissues of the bull other than the epididymis.[19]

The testicle is not, however, a self contained functioning organ, but it is in turn dependent on secretions from the anterior lobe of the hypophysis for its power both to produce germ cells and to provide the male hormone. An adult normal male rat, after removal of its hypophysis, at once experiences decrease in weight and size of the testes, a loss of its ability to produce

4. Steinach, E.: Arch. f. Entwcklngsmechn. d. Organ. **46:** 557, 1920.
5. Cooper, Astley: Observations on the Structure and Diseases of the Testis, ed. 1, London, 1830.
6. Benjamin, H.: M. J. & Rec. **122:** 452 (Oct. 21), 515 (Nov. 4), 592 (Nov. 18), 1925.
7. Moore, C. R., and Quick, W. J.: Am. J. Anat. **34:** 317 (Nov.) 1924. Moore, C. R., and Oslund, R.: Am. J. Physiol. **67:** 595 (Feb.) 1924. Oslund, R.: Ibid. **67:** 422 (Jan.) 1924; **70:** 111 (Sept.) 1924. Moore, C. R.: Anat. Rec. **48:** 105, 1931.
8. Popenoe, Paul: J. Abnorm. Psychol. **24:** 251 (Oct.-Dec.) 1929.
9. McGee, L. C.: Proc. Inst. Med. Chicago **6:** 242, 1927.
10. Gallagher, T. F., and Koch, F. C.: J. Biol. Chem. **84:** 495 (Nov.) 1929; J. Pharmacol. & Exper. Therap. **40:** 327 (Nov.) 1930. Koch, F. C.: Extraction, Distribution and Action of Testicular Hormone, J. A. M. A. **96:** 937 (March 21) 1931.
11. McGee (footnote 9). Gallagher and Koch (footnote 10). Koch (footnote 10). McGee, L. C.; Juhn, Mary; and Domm, L. V.: Am. J. Physiol. **87:** 406 (Dec.) 1928. Moore, C. R.; Gallagher, T. F., and Koch, F. C.: Endocrinology **13:** 367 (July-Aug.) 1929.
12. Moore, C. R., and McGee, L. C.: Am. J. Physiol. **87:** 436 (Dec.) 1928. Moore, C. R., and Gallagher, T. F.: Am. J. Physiol. **89:** 388 (July) 1929; Am. J. Anat. **45:** 39 (Jan.) 1930; J. Pharmacol. & Exper. Therap. **40:** 341 (Nov.) 1930. Moore, C. R.; Price, Dorothy; and Gallagher, T. F.: Am. J. Anat. **45:** 71 (Jan.) 1930. Moore, C. R.; Hughes, W., and Gallagher, T. F.: Ibid **45:** 109 (Jan.) 1930. Heller, R. E.: Proc. Soc. Exper. Biol. & Med. **27:** 751 (May) 1930. Vatna, Sup: Biol. Bull. **58:** 322 (June) 1930.
13. McGee (footnote 9). Gallagher and Koch (footnote 10). Koch (footnote 10). Martins, T., and Rocha e Silva: Mem. do Inst. Oswaldo Cruz **9:** 196, 1929. Martins, T.: Endokrinologie **7:** 180 (Aug. 30) 1930. Loewe, S., and Voss, H. E.: Sitzungsb. d. k. Akad. d. Wissensch. Math.-naturw., Wien, 1929, number 20. Freud, J.; de Jongh, S. E.; Laqueur, E., and Münch, A. P. W.: Klin. Wchnschr. **9:** 1871 (Oct. 4) 1930 (Addendum). Dodds, E. C.; Greenwood, A. W., and Gallimore, E. J.: Lancet **1:** 683 (March 29) 1930.
14. Funk, Casimir; and Harrow, Benjamin: Proc. Soc. Exper. Biol. & Med. **26:** 325 (Jan.) 1929. Funk, Casimir; Harrow, Benjamin; and Lejwa, A.: Ibid. **26:** 569 (April) 1929; Am. J. Physiol. **92:** 440 (March) 1930. Womac, E. B., and Koch, F. C., to be published.
15. Martins (footnote 13).
16. Koch (footnote 10). Womac and Koch (footnote 14).
17. Koch (foonote 10). Womac and Koch (footnote 14). Loewe, S.; Voss, H. E.; Lange, F., and Wähner, A.: Klin. Wchnschr. **7:** 1376 (July 15) 1928.
18. Loewe, S.; Voss, H. E.; Lange, F., and Spohr, E.: Endokrinologie **1:** 39 (Jan.) 1928.
19. Gallagher, T. F.; Am. J. Physiol. **87:** 447 (Dec.) 1928.

germ cells with the destruction of those contained within it at the removal of hypophysis, and the inability to elaborate the male hormone; castration changes develop as rapidly as if the testes themselves had been totally removed.[20] The two intact testes after hypophysectomy have therefore suddenly lost their ability to carry on their usual function, but they will regain this function if only the body is supplied with the sex stimulating hypophysis secretion. How many conditions, in turn, exert an influence on the hypophysis to increase or decrease its secretory function is not known. It has been demonstrated, however, that inanition induced both through quantitative and through qualitative (vitamin B deficiency) restrictions in diet lowers the amount of hypophyseal secretion available to the organism, which in turn results in injury to the testis, first, in its hormone producing capacity and, secondly, in its germ cell activity.[21] Functional return has been induced within a few days by proper dietary additions or by hypophyseal administration. Lack of manganese in the diet also leads to testicular atrophy, and it has been suggested that here also the hypophysis may be a link in the chain of events.[22]

The knowledge gained from the successful efforts of the biochemists to extract the male hormone, coupled with observations made on the effects of castration, permit certain generalizations. The male hormone can be extracted from the testicle before birth, but appears not to be excreted in the urine until near the stage of puberty. In the mature man there is apparently a constant excretion through the kidneys in a daily amount which Koch has estimated to be equivalent to the amount recovered from the extraction of 1 pound of bull's testis tissue. It is present in higher concentrations in the blood of the internal spermatic vein than in that of the internal jugular vein. The substance is apparently being produced constantly (though in some mammals its production is, without doubt, seasonal), but it is not stored within the body since castration or cessations of injections into the castrate bring on definite regression changes in the accessory organs of reproduction within a period of from two to three days. It is likewise clear that production of the hormone does not depend on spermatogenic activity in the testicle, since experimentally produced cryptorchid males, devoid of germ cell activity for months, produce as much as they did while the testes were spermatogenically active (within the limits of our ability to test it accurately[23]). And, finally, it is now certain that male hormone production depends on the presence of sex stimulating secretions from the hypophysis. When the amount of this hypophyseal substance available is lowered below normal there is a diminution of male hormone, and in the total absence of the hypophysis there is no male hormone production. The hypophyseal secretion is without effect on male characters in the absence of testes; hence it exerts its influence by stimulating the activity of the testicle.

THE FUNCTION

When an inquiry is directed to the function of the male hormone, particularly in the human individual, one encounters a most extraordinary group of contentions that taxes the ability of critically minded individuals to the uttermost to arrive at apparently sane conclusions. The commonplace conceptions and opinions inherent in all human society and the complexities of the general social order have engendered tendencies and distorted the relations between the two sexes away from the fundamental order of nature that applies rigidly to the function of reproduction alone. Suggestive psychology and subjective criteria are largely the basis of reported effects of therapeutic attempts at hormone manipulation in man. It is obvious that for orientation we must turn to the simpler social order inherent in mammals lower than man and note the effects of a lack of the male hormone to gain a proper insight into its function.

In mammals it is clear that male hormone is responsible for the development and function of the accessory organs of reproduction and for the development of many of the typically masculine attributes. Thus, the development and function of the prostate gland, seminal vesicles and Cowper's gland, as well as, to some extent, the size of the penis, depend on the presence of the male hormone, but even here too little attention has been given to differences following prepubertal and postpubertal castration. After the stage of puberty, or masculine maturity, the loss of the hormone is less evident. It is clear in many specific cases, but less clear in others, that the instinct of mating is conditioned by male hormone, either directly or indirectly. To mention only two cases in which hormonal control is in some doubt: We have often employed male guinea-pigs, castrated at 30 days of age (prepubertal), as a means of detecting females in heat when actual mating was undesired; the mating instinct persists and male behavior persists for months despite the early castration. In the case of the white rat, Stone[24] learned that males castrated at an early age will copulate with females up to five or eight months. Castration, therefore, does not immediately and permanently destroy sexual inclinations and behavior, even in lower animals.

Aside from the control of the secondary sexual characters—internal, such as the accessory reproductive organs, and external, such as some horn growth and the growth of the cock's comb—and to some extent the control of breeding instincts, there is but little to ascribe definitely to the action of the male hormone. It is a popular conception that loss of the testicles leads invariably to greater growth or fat deposition among animals in general. For the capon—and here other factors are of importance—the idea receives some substantiation, but it cannot be applied generally, since to my knowledge it is not established for any domestic mammal. Investigations on basal, gaseous or nitrogenous metabolism after castration have likewise failed to follow a sufficiently consistent trend to allow the consideration of a definite modification as being established by the elimination of hormone.

The effects of castration in man have not yet been sufficiently studied for the whole story to be known, especially the differences arising from prepubertal and postpubertal removals. The classic eunuch has been the material most considered, but the mere fact of his unique social status and conditions of life has no doubt played a great part in his general reactions and psychology, making subjective reports independable to reveal the actual effects of the mere loss of the male

20. Smith, P. E.: Disabilities Caused by Hypophysectomy and Their Repair, J. A. M. A. **88**: 158 (Jan. 15) 1927; Am. J. Anat. **45**: 205 (March) 1930.

21. Moore, C. R., and Samuels, L. T.: Am. J. Physiol. **96**: 278 (Feb.) 1931.

22. McCallum, E. V., and Orent, E. R.: Science **73**: 507 (May 7) 1931.

23. Moore, C. R., and Gallagher, T. F.: Am. J. Anat. **45**: 39 (Jan.) 1930. Jeffries, M. E.: Anat. Rec. **48**: 131, 1931.

24. Stone, C. P.: J. Comp. Psychol. **7**: 369 (Oct.) 1927.

hormone. Objectively, however, certain characters, such as the high pitched voice dependent on laryngeal modifications, are apparent. The growth of hair is often modified in rate and distribution, but reports of 40 year old eunuchs with beards introduce a question of the control of this character by the male hormone alone. In stature, complications again enter since some are tall and thin, others short and fat. It has also been assumed generally that loss of the male hormone carries with it the loss of sexual inclinations, but many reports show that not only is erectile power retained but there exists a considerable amount of promiscuity with prostitutes; frequent coitus is reported even twenty years after the operation,[25] and gonnorhea was reported in ten out of twenty-three cases carefully examined.[26] Instead of eunuchs voluntarily avoiding the society of women, the reverse is reported. Castration after puberty, on purely physiologic grounds, naturally has less effect, and case B-42 of Rowe and Lawrence [27] is interesting and to the point. Completely castrated at the age of 25 because of tuberculosis of the testes, the formerly energetic patient developed a severe mental depression, gave up an interesting occupation of travel and settled down in his home town. Nine years later, marriage with a young woman acquainted with his condition revealed the persistence of sexual inclinations and copulatory ability satisfactory to both partners. A mental reawakening and change of mental attitude followed, and the organization of a successful commercial venture was accomplished; and this after but psychologic therapy.

The idea of increasing the life span and usefulness has unfortunately crept into the general concept of the function of male hormone without any apparent basis of fact. No one has ever shown for man or mammal that the castrated individual is shorter lived, more easily fatigued, or more useless (except for breeding) than the normal individual. Indeed, the Skopecs (eunuchs) are reported to be a long lived group of individuals in spite of the probable lack of intensive modern hygiene and medication.[25] History records major attainments for eunuchs in government and military positions. The observations in regard to changes in metabolism—basal, gaseous or nitrogenous —in total absence or in supposed diminution of male hormone are again lacking in accord, and until more evidence is available it appears necessary to consider that no differential is yet demonstrated from the loss of these secretions.

These considerations may perhaps tend to make one skeptical concerning a real index of hormone loss, especially when this loss has occurred after maturity of the voice and the masculine habitus has been attained. It serves to emphasize again that the safest criterion of hormone absence in man will undoubtedly center around changes in the internal accessory organs of reproduction, and these have been but little studied in the castrated man. Without doubt their secretory function declines, as in animals, following hormone loss.

From observations on mammals, castration entails also changes in the hypophysis which in some instances have expressed themselves in an increase in size, but, probably of more physiologic importance, it leads to a greater production of the sex stimulating secretion.[28] What the ultimate effects of this change in secretion or of other secretory changes in the hypophysis are is not fully known in experimental mammals, and practically nothing is known of the situation in man.

Methods of administering the male hormone therapeutically in man should receive brief mention. Some workers have claimed, or strongly suggested, that the introduction of male hormone would stimulate a hypofunctioning testicle. Naturally the first difficulty is to distinguish such an alleged "hypofunctioning" testicle, and the second consideration should be to inquire into the evidence supporting the assumption of such an effect from the hormone.

To my knowledge there is no single criterion or set of criteria that clearly indicates in man a hypogonadal state of the testicle. When objective means have been found that bridge this difficulty, the way will be opened for sane procedures. It cannot be too strongly emphasized that in this field of investigation subjective indexes are misleading and independable. As to the effect of the hormone on the testicle, it may be said in general that no endocrine gland has been proved to be stimulated by an internal secretion which the organ itself produces. Specifically in regard to the testis, we have dealt in our laboratory with many mammals whose testes have been experimentally injured both for germ cell and for hormone production. We have never been able to detect any stimulating effect on these or on normal testes from the injection of potent doses of male hormone. On the contrary, the normal testicles of young rats have been injured and held back in their development when the male hormone was administered. We have found that daily injections of male hormone into rats at the age of puberty, for a period of two weeks, causes a loss in weight of the testicles of 50 per cent, and histologic study reveals pronounced injury. Such an injury is regarded as indirect by virtue of a reciprocal action between the hypophysis and the gonads.[29] Excessive administration of sex hormone, male or female, appears to depress the sex stimulating secretion of the hypophysis and in the absence of, or diminution of, the hypophyseal secretion the sex glands are injured. This is equally true for the female since administration of female hormone instead of stimulating ovarian activity actually injures the ovaries materially.[30] Male hormone, thus administered to males, does not repair testis damage, though it does have a marked action on the accessory organs of reproduction. The testicle can be stimulated to excessive hormone production by administration of fresh hypophyseal implants or active hypophysis secretion, but there is no evidence that the male hormone in any way stimulates the testicle.

In the absence of testicular tissue the male hormone must necessarily be introduced either by living, secreting testis grafts or by potent hormone preparations. Testicular transplants in experimental animals, with dependable objective criteria for an effect, have been proved in some cases to provide a source of male hormone for the organism. The only grafts that have clearly shown an effect have been those from testis tissue of the same species. We have as yet no evidence that the introduction of foreign testis tissue has any

25. Tandler, J., and Grosz, S.: Wien. klin. Wchnschr. **21**: 277, 1908; Arch. f. Entwcklngsmechn. d. Organ. **30**: 236, 1910.
26. McCartney, J. L.: Endocrinology **13**: 73 (Jan.-Feb.) 1929.
27. Rowe, A. W., and Lawrence, C. H.: Endocrinology **12**: 591 (Sept.-Oct.) 1928.
28. Evans, H. M., and Simpson, M. E.: Am. J. Physiol. **89**: 371 (July) 1929.
29. Moore, C. R., and Price, Dorothy: Proc. Soc. Exper. Biol. & Med. **28**: 38 (Oct.) 1930. Moore, C. R.: Proc. 2d International Sex Congress, London, 1930.
30. Allen, E.: J. Morph. & Physiol. **46**: 1928. Meyer, R. K.; Leonard, S. L.; Hisaw, F. L., and Martin, S. J.: Proc. Soc. Exper. Biol. & Med. **27**: 702 (April) 1930. Kunde, M. M.; D'Amour, F. E.; Gustavson, R. G., and Carlson, A. J.: Proc. Soc. Exper. Biol. & Med. **28**: 122 (Nov.) 1930.

effect. Even with transplantations of tissue from the same species an incorporation of approximately 50 per cent is to be considered a good result, and out of the 50 per cent a much smaller number of grafts have given any indication of function.[31] Nonviable transplants undergo autolysis, usually with suppuration and sloughing, but, despite this, some writers claim far reaching beneficial influences from supposed hormone liberation. We have employed rats and guinea-pigs, in which we have available very sensitive tests for hormone, in an attempt to determine whether such autolyzing testis transplants liberate the male hormone in detectable quantities. Two entire adult testes placed in subcutaneous implantation beds underwent typical autolysis with sloughing of tissue, but despite the sensitivity of our indicators we were unable to detect the introduction of any hormone by such means.[32] Since the amount of hormone that can be extracted from testis tissue is so small (Koch), one could not anticipate the introduction by means of nonviable grafts of appreciable amounts of hormone except by the daily transplantation of large amounts of testis tissue; furthermore, the hormone thus introduced, if any, would be promptly eliminated through the kidneys; hence, no lasting effects could be anticipated.

Administration of potent hormone preparations, even to insure the introduction of hormone, requires daily injections, and up to the present time I am unaware of any active hormone preparation on the market. One biologic house preparing capsules for oral administration has circularized the medical profession with literature, giving prominence to the names of workers at the University of Chicago (Koch, Gallagher, Moore) with the implications that their preparations have proved active by tests we have developed and employed. One gains the impression that this product has our stamp of approval. We have assayed purchased samples of this product by two different methods (capon comb and spermatozoan motility test) and failed to find any indication of activity in the dosages prescribed; the report has been published by Gallagher.[33] Oral administration to the capon in amounts ten times as strong as effective subcutaneous dosages give very irregular results.[34]

CONCLUSION

The male hormone has been prepared from different sources in effective concentrations and has been shown to stimulate the growth of the capon comb and to afford a physiologic substitute for the internal secretions of the mammalian testicle when it is introduced by subcutaneous injection; oral administration has thus far given only independable results. Testes without a germinal epithelium apparently produce as much hormone as those carrying on active spermatogenesis. The male hormone is produced only when the sex stimulating secretions of the hypophysis are available, and in deficiencies of this secretion the testes produce neither germ cells nor hormone. The function of the male hormone is to control the development of the accessory organs of reproduction and many of the external secondary sex characters and to control the function of the accessory organs of reproduction. Definite objective criteria are available for detection of the presence or absence of male hormone in some mammals, but they are not yet available for such detection in man. Hormone is produced continuously in the body but is eliminated through the kidneys, and no hormone storage is exercised by the body.

University of Chicago.

31. Moore, C. R.: Am. J. Anat. **37**: 351 (May) 1926.
32. Moore, C. R.: Physiologic Effects of Nonliving Testis Grafts, J. A. M. A. **94**: 1912 (June 14) 1930.
33. Gallagher, T. F.: Report on the Biologic Assay of "Lydin," J. A. M. A. **95**: 201 (July 19) 1930.
34. Koch (footnote 10).

ABSTRACT OF DISCUSSION

DR. L. G. ROWNTREE, Rochester, Minn.: I do not approve entirely of the name "male hormone," because there might be male hormones from many different sources. I wish that some one, perhaps the endocrinology society, might consider names, because they are now becoming a terrible problem in medicine, particularly as there are hormones from so many sources and with so many different names. Triangular action is coming to the fore among those who work with the female hormone and the pituitary in exactly the same way. There would seem to be a striking analogy between what goes on in the male and in the female with reference to the gonad that responds and accessories that respond. I have never been quite satisfied from the work of Dr. Moore or others what the crucial factors are that have to do with spermatogenesis and with behaviorism. I wish he would enlighten us on this point. It is extremely interesting to know that Brown-Séquard, who did so much for medicine, also started quacks on their course at the same time and they have continued throughout on the basis of the indirect evidence which he furnished, we in medicine, of course, proceeding on the direct type of evidence. I also should like to ask him to what extent he feels that the thyroid and suprarenals, which unquestionably play some rôle, are involved in the action of this hormone. I think the chief thing I have to say is that we have to have an anchor in certain fields in medicine, and, I confess, Dr. Moore has been my anchor in this field. I have read a great deal because I had to, and after having covered great quantities of literature, I found he has read it all, digested it all, and I believe interpreted it wisely. I believe that one statement which he made, namely, that no gland can be stimulated to activity by its own product, if it could travel round the world among physicians and among the public, would do more than anything else to correct flagrant abuses in the way of charlatanism in medicine and out of medicine at the present time. Dr. Moore said nothing about the clinical application. I believe he feels that we are not ready for it. From what I have seen of the futile efforts that have been made to date, I should be willing to follow his lead and not attempt to use it until he feels that there is an application in clinical medicine.

CARL R. MOORE, PH.D., Chicago: I do not believe we are ready to give a definite answer to the question of the influences that govern spermatogenesis. A great deal of evidence, of course, is available that spermatogenesis cannot continue in the absence of the hypophysis. However, by administration of the gonad stimulating hormone either by hypophyseal implants or by injection of active hormone preparations spermatogenesis has not been hastened; there is no precocious maturity such as appearance of spermatozoa earlier than in the normal testis. The relationship of the thyroid and suprarenals is not known. We do know that administration of powdered thyroid substance, or the removal of the thyroid, does not modify the endocrine activities of the gonads. The clinical application of the testis hormone is highly questionable. One point should, however, be emphasized. Defective sex glands are not stimulated by administration of sex hormone. Rather than stimulating the ovary, the administration of the female sex hormone depresses and injures this organ; and instead of stimulating the testis, the testis hormone depresses and injures it. Young males injected daily for twenty days with testis hormone have been found to have testes reduced to 50 per cent, or less when compared with untreated littermates. The similar response of the ovary to the injection of estrin or theelin makes it quite clear that the clinical administration of the sex hormones cannot be relied on to stimulate a hypofunctioning gonad. It would seem to be a question for the clinician who wishes to administer these substances to determine what he wishes to administer them for and to arrive at some notion as to the relative advantages of the applications.

DISAPPEARANCE OF THE PLACENTAL SITE DURING THE PUERPERIUM *

J. WHITRIDGE WILLIAMS

BALTIMORE

At the recent meeting of the American Gynecological Society I presented a lengthy contribution on the "Regeneration of the Uterine Mucosa After Delivery, with Especial Reference to the Placental Site." At that time, I reviewed the literature, demonstrated forty-eight lantern slides illustrating my own observations, and drew the following conclusions:

1. The mucosa of the cervical canal is restored by the end of the first week.
2. Outside of the placental site the endometrium becomes regenerated during the course of the third week.
3. The placental site persists for from six to seven weeks, and its disappearance is effected by a process of exfoliation which in great part results from undermining by endometrial tissue.

My object in this paper is to describe briefly the changes occurring at the placental site, and those who may be interested in what occurs outside of it, or in the literature on the subject, are referred to the more extensive article, which will appear in the *American Journal of Obstetrics and Gynecology* next fall.

Fig. 1.—Above, cross-section through uterus immediately after cesarean section; below, placental site eight hours post partum; about half natural size.

When a normal uterus is opened during the first few days after delivery, the placental site appears as a rounded, nodular, blood stained area, which projects from 5 to 10 mm. beyond the surrounding mucosa. On section it is found to be made up of relatively large vessels whose contents have in great part undergone thrombosis. As the puerperium advances, it becomes smaller and smaller, loses its blood stained appearance and normally disappears during the seventh week. Figures 1, 2 and 3 give a good idea of the progressive changes.

These facts have been known for years, as well as the further fact that the nodular structure is due to the presence of degenerated arteries and thrombosed veins. A careful survey of the literature, however, indicates that none of the previous writers thoroughly understood its mode of production or the mechanism by which its disappearance is effected, and many attribute this uncertainty to the lack of suitable material, as it is believed that uteri obtained at autopsy on women dying from puerperal infection do not give the information desired.

Fig. 2.—Placental site eight and fourteen days post partum; about half natural size.

During the course of years I have collected a material which seems fitted to solve certain problems, and which has been derived from three sources: (1) uteri removed by supravaginal hysterectomy following cesarean section or removed for other reasons during the first days of the puerperium; (2) uteri obtained at autopsy on women dying during the first week of the puerperium from causes other than infection, and (3) a series of eighteen uteri removed from uninfected women between the seventh and the one hundred and twentieth day after delivery as follows: one specimen each from the seventh, ninth, twelfth, fourteenth, sixteenth, seventeenth, twentieth, twenty-fourth, twenty-sixth, forty-first, forty-eighth, fifty-first, ninetieth and one hundred and twentieth day; and two each on the eighth and twenty-first days. It might be added that the specimens in the last series were obtained from women suffering from chronic nephritis, serious heart disease, or various

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

psychopathic disturbances in whom sterilization appeared to be indicated.

In a small proportion of the uteri removed at cesarean section, the placenta remained in situ, but in the majority it had been expelled spontaneously or removed artificially before the uterus was amputated. Examination of the latter, after hardening, revealed the somewhat surprising fact that a characteristic placental site was never present. In a certain proportion of uteri its location was indicated by the presence of relatively large vessels in the underlying muscularis, but in the majority it could not be distinguished with the naked eye, nor could it be identified until histologic examination had demonstrated in the decidua basalis and in the musculature underlying it the presence of chorionic giant cells, which afford indubitable evidence of its existence. The upper drawing in figure 1 gives a good idea of the conditions usually found just after delivery. Within a few hours, however, the conditions change radically and the characteristic blood stained and nodular placental site develops; the lower drawing in figure 1 shows its appearance. How this change is brought about, I cannot answer positively; but I can suggest a theory that offers a plausible explanation for it.

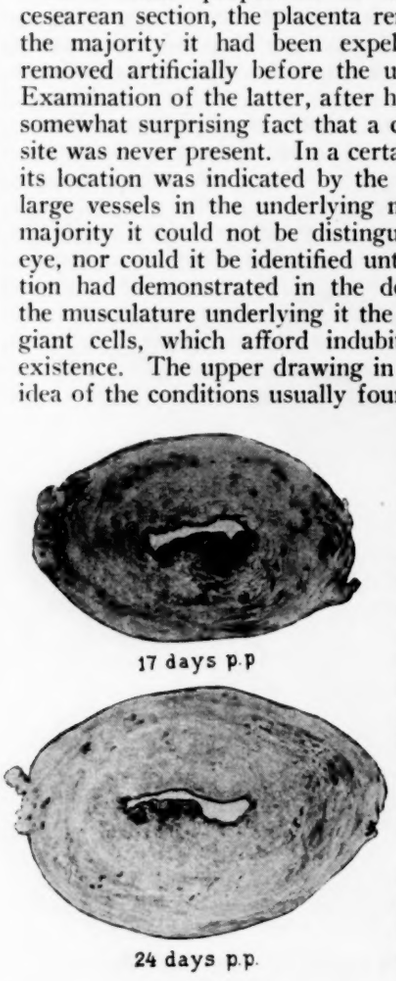

Fig. 3.—Placental site seventeen days, twenty-four days and three months post partum; about half natural size.

Figure 4 represents a section from a cesarean section uterus, and shows that part of the compact and all the spongy layer of the decidua basalis has been retained and that, while it contains blood vessels, none of them are distended with blood. On the other hand, figure 5, which represents the same location in a uterus removed three quarters of an hour post partum, shows that a radical change has occurred and that the greater part of the decidua basalis now consists of large vessels distended with blood and separated from one another by a minimal amount of tissue. From this time onward, the placental site consists of an aggregation of obliterated arteries and thrombosed veins. The latter tend to become organized by invasion by fibroblasts and the intervening tissue to undergo hyalin change. Figure 1 gives a good idea of the gross appearance at the end of the first twenty-four hours, and figure 6 shows the structure of the placental site when magnified eighteen times.

My theoretical explanation for the transformation into a well developed placental site is as follows: Immediately following the extrusion of the child and the placenta, the uterine musculature contracts to its maximum extent, so that the vessels throughout its wall are forcibly compressed and the relatively large, thin walled venous sinuses in the decidua basalis collapse completely. Shortly afterward, however, the uterus relaxes to a certain extent, with the result that the

Fig. 4.—Section through decidua basalis, cesarean section uterus, showing compact and spongy layers of decidua and absence of distended vessels; × 18.

circulation in the thick walled arteries is partially resumed, while the thin walled veins throughout the muscularis still remain compressed. Consequently, the blood, which gains access to the uterus but finds difficulty in escaping from it, collects in the veins of the basalis and leads to their distention and engorgement. In a short time equilibrium becomes established, and, the venous contents at the placental site having already become thrombosed, the nodular structure is produced with which all pathologists and some obstetricians are familiar.

Fig. 5.—Section through placental site three quarters of an hour post partum, showing distended and partially thrombosed vessels; slightly reduced from a photomicrograph with a magnification of 18 diameters.

From this time onward, the placental site gradually becomes smaller and eventually disappears during the course of the seventh week after delivery. Outside of the placental site, the superficial portion of the decidua

vera, which is left in situ after the separation of the membranes, becomes infiltrated with leukocytes, undergoes necrotic changes and is cast off with the lochia, and a new mucosa is regenerated from the fundi of the glands which remain. As I have indicated, this regeneration is completed during the course of the third week and need not concern us here.

At the placental site, however, conditions are much more complicated. Here there is but little infiltration with leukocytes, and very little necrosis, and its disappearance is effected by a process of exfoliation during which tissue is cast off into the uterine cavity long after the lochial flow has ceased, and, as I shall presently show, it continues for six or seven weeks, or until the entire placental site has disappeared.

As I shall attempt to indicate, the vessels at the placental site occupy not only the remnant of the decidua basalis but also a portion of the muscularis immediately beneath it. As a result certain, at least, of the basalis glands come to lie internal to some of the thrombosed

Fig. 6.—Placental site twenty-four hours post partum, composed almost entirely of thrombosed veins and obliterated arteries; slightly reduced from a photomicrograph with a magnification of 18 diameters.

vessels, so that if regeneration of the mucosa in that location were solely effected by the proliferation of the former, a considerable part of the thrombosed vessels would come to lie external to them and consequently would be retained after the completion of the endometrial regeneration. As this, however, does not occur, some other mechanism must come into play, and I shall show that it consists in an undermining of the placental site by strands of endometrium growing in from its margins, and eventually leading to its exfoliation.

Figure 7 represents a section through the placental site at the twelfth day and shows above a partially organized thrombosed vessel and below a portion of well preserved endometrium.

Time and space do not permit a full presentation of the subject, so that I must be content to consider only a few of the specimens, which support my thesis. Figure 8 represents the appearance of one margin of the placental site at the seventeenth day under low power and shows that it still consists of an agglomeration of partially organized vessels and that it is being undermined by endometrial tissue growing in from the side. Figures 9 and 10 represent the same under high power; figure 9 showing that a thin layer of endometrium covers part of the free surface of the placental site and

Fig. 7.—Portion of placental site twelfth day post partum, showing partially organized thrombosed vein with well developed endometrium beneath it; × 75.

figure 10 that endometrial processes, consisting both of epithelium and stroma, are invading the characteristic hyalin and newly organized tissue.

Likewise, figure 11 represents the appearance of the uterine cavity of a twenty day puerperal uterus under

Fig. 8.—Appearance of part of placental site on seventeenth day, with undermining at left margin; × 18.

low power. Here the entire lumen is occupied by the almost hyalin placental site, which is in close contact with the regenerated mucosa of the opposite wall. It

is clearly made up of partially organized and hyalin vessels. On the right side the lumens of various glands are seen, while in the lower left hand corner it is apparent that the margin of the placental site is being undermined by endometrial ingrowths.

Fig. 9.—Part of placental site shown in figure 8, with regenerated endometrium on surface and partially organized thrombosed vessels beneath; × 75.

As the puerperium advances the placental site is constantly becoming smaller and losing its blood stained appearance. Figure 12 shows part of a specimen from the twenty-fourth day. Here again the characteristically obliterated vessels are seen, and in the lower right hand corner the undermining endometrium. Figure 13 gives a more highly magnified picture of the latter area and

Fig. 10.—Part of placental site shown in figure 8, with invasion by downgrowths of endometrium; × 75.

shows well regenerated endometrium extending beneath an organized thrombosed vessel.

The question now arises as to how the decrease in size and eventual disappearance of the placental site is brought about. It would appear that the evidence thus far adduced makes three points clear: first, that the process is in no way connected with inflammatory change; second, that there is no evidence of any extensive necrosis, and third, that all the specimens show unusual proliferation of endometrial tissue, which does not merely cover the surface but invades the placental site in all directions, and particularly extends between it and the underlying muscularis, leading to its undermining and eventual extrusion or exfoliation. Consideration of the specimens thus far presented make such a supposition appear plausible but do not prove it. Consequently, additional evidence must be adduced if one expects to demonstrate that the placental site is exfoliated as the result of undermining by endometrial tissue.

To my mind, this can be readily done, for examination of all my specimens shows that tissue of various kinds can be found free in the uterine cavity throughout the entire course of the puerperium; that is, up to the end of the seventh week. Such tissue may consist of shreds of necrotic mucosa, of particles of tissue which can be identified as obliterated or hyalin vessels, of particles of hyalin tissue containing fragments of

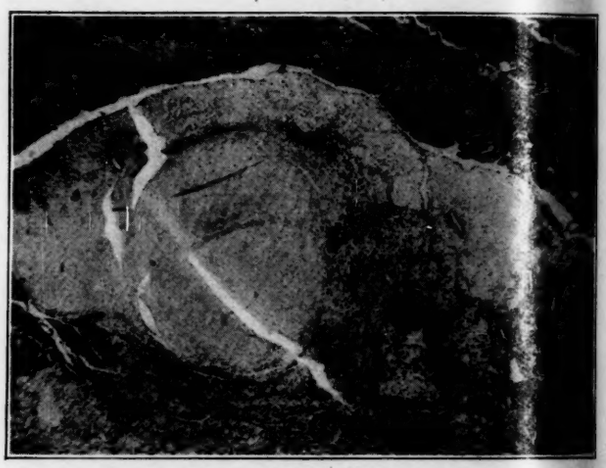

Fig. 11.—Appearance of placental site at twentieth day under low power. It can be noted that it completely fills the uterine cavity and is in contact with the regenerated endometrium on the opposite wall. Slightly reduced from a photomicrograph with a magnification of 18 diameters.

endometrium, of fragments of completely regenerated endometrium, and, finally, of polypoid masses of tissue in actual process of extrusion.

The reader is referred to the more extended article for details concerning this process, but figures 14 and 15 give an idea of it. Thus, the former shows an obliterated vessel lying free in the uterine cavity on the eighth day, while the latter represents a mass of placental site tissue invaded in many directions by endometrial ingrowths. Finally, figure 16 shows a polypoid mass made up of partially organized and hyalin tissue, attached to the free surface of the endometrium by two small peduncles, and but little imagination would be required to visualize its complete separation.

The crowning evidence, however, is presented by figure 17, which represents the last stage of the placental site. In this uterus from the forty-eighth day, it consists of a tag of tissue 1 by 3.5 mm. which projects into the lumen as a tongue-like polypoid mass. Its free surface is covered by a single layer of epithelium, while its stroma presents the structure which we have learned

to recognize as characteristic of the placental site. That the process of regeneration is about complete is further shown by the fact that the rest of the mucosa presents the histologic changes characteristic of the first day of menstruation, and, indeed, the patient had begun to menstruate the morning of the day of operation.

Finally, figure 18, from a uterus fifty-one days after labor, shows that the entire process has been completed and that the mucosa presents the characteristic picture of the resting stage of the cycle.

In the foregoing, I have attempted to outline briefly the history of the placental site in the normal puerperal woman. Six or seven weeks is required for its disappearance, which is not effected by absorption in situ, as was formerly believed, but rather by a process of exfoliation which is in great part the result of undermining by proliferating endometrial tissue. This is effected in part by extension and downgrowth of endometrium from the margins of the placental site and partly by the development of endometrial tissue from

Fig. 12.—Portion of placental site on twenty-fourth day; × 18.

the glands and stroma left in the depths of the decidua basalis after separation of the placenta. In general, I attach more importance to the former than to the latter mechanism.

From another point of view, such a process of exfoliation should be regarded as a very conservative and wise provision on the part of nature. Otherwise great difficulty might be experienced in getting rid of the obliterated arteries and thrombosed vessels, for if they remained in situ a considerable part of the mucosa would soon become converted into a mass of dense scar tissue, with the result that after a few pregnancies it would no longer be able to go through its usual cycle of changes, and reproduction would come to an untimely end.

In this connection, it may be asked, if exfoliation is effected as I have indicated, why it is not limited to the undermining and extrusion of the placental site, and why endometrial tissue spreads over a part of the surface and invades the depths of the placental site with the result that large amounts of newly formed endometrial tissue are cast off during the exfoliative process. I can give no satisfactory explanation, but can only suggest that in this, as in other reparative processes, nature appears to be unduly lavish and to do much unnecessary work.

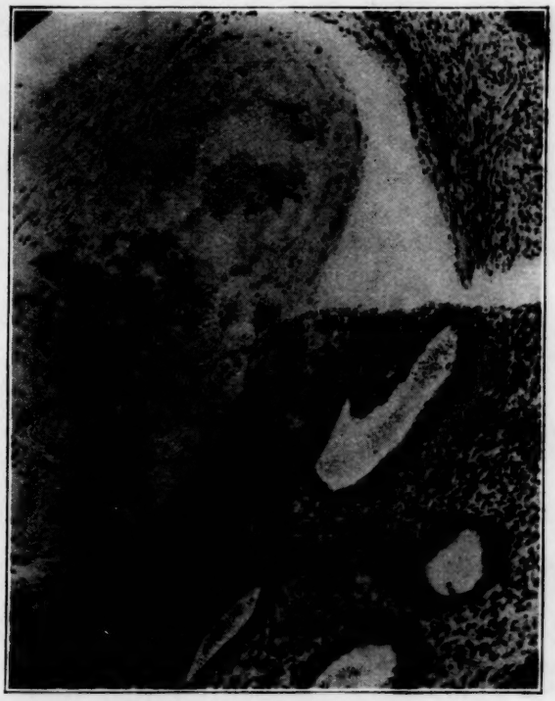

Fig. 13.—Lower right hand corner of figure 12 more highly magnified, showing partially organized thrombosed vein with well regenerated endometrium beneath it; × 75.

Furthermore, I would direct attention to the fact that fragments of tissue are being cast off throughout the entire process. For years, a loss of tissue has been associated with the lochial flow, but few had any idea that it continues for a month or more after its cessation;

Fig. 14.—Partially organized thrombosed vessel lying free in uterine cavity on eighth day post partum; × 50.

in other words, that it lasts throughout the entire anatomic puerperium.

In studying my specimens I was impressed by the fact that only a few of them showed the presence of

phagocytes containing blood pigment. It is a well known physiologic fact that they usually abound in tissue which is caring for past hemorrhage and consequently should be expected here; but as far as I can ascertain they

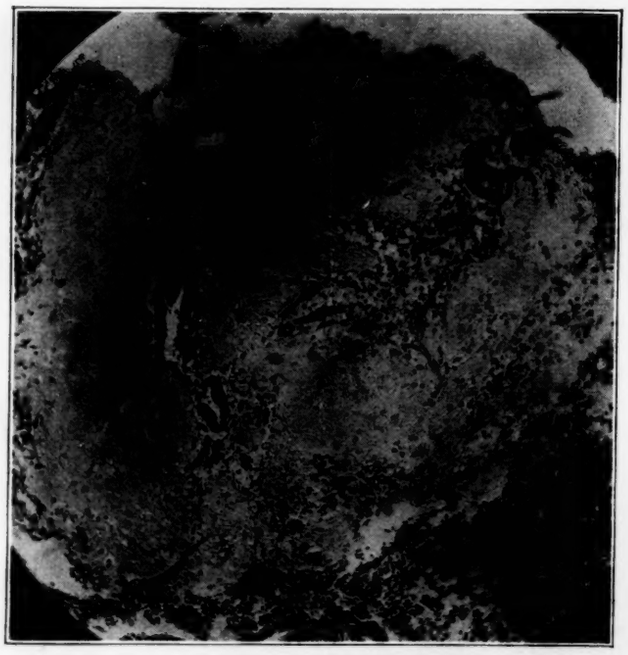

Fig. 15.—Fragment of placental site containing endometrial elements lying free in uterine cavity on twenty-first day; × 50.

are noted much less frequently at the placental site than one would expect.

In discussing the recent placental site, I referred to the presence of obliterated arteries. These show unusual proliferation of the intima and pronounced hyalin change in the rest of their walls. In the more extended paper I referred to the discussion concerning

Fig. 16.—Polypoid mass of placental site tissue in process of exfoliation on twenty-fourth day post partum; slightly reduced from a photomicrograph with a magnification of 50 diameters.

their nature, which has continued over a half century without being definitely settled. I mention the subject here, only for the purpose of stating that I regard the obliterated arteries at the placental site as the peripheral ends of vessels which present similar changes in other parts of the uterine wall. These terminal ends are cast off with the placental site, while the distal portions remain in situ and present the characteristic picture which some designate as sclerosis, and with which we are all familiar. Certain of these vessels are doubtless replaced by smaller ones, as described by Goodall, others become obliterated and are probably completely absorbed, while in many women large numbers persist for the rest of life and afford a means of diagnosticating the existence of previous pregnancy. In my opinion, the complete disappearance of the distal ends at the placental site and the persistence of the rest of the vessel elsewhere would seem to constitute an additional argument in support of my view of exfoliation.

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ABSTRACT OF DISCUSSION

DR. FRED L. ADAIR, Chicago: I have some material from seven cases of regeneration of the uterine mucosa after labor which has been collected more or less hurriedly and which seems to confirm the observations of Dr. Williams and

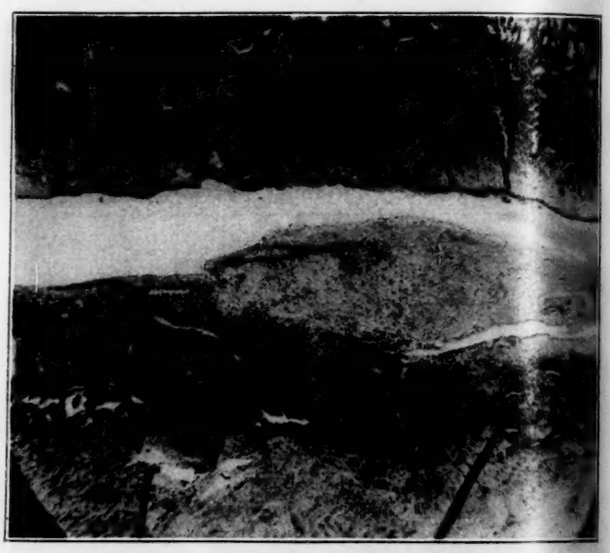

Fig. 17.—Final stage of exfoliation of placental site on forty-eighth day post partum; the opposite endometrium shows signs of beginning menstruation; × 18.

to possess a few points of interest. The first slide is from a patient with abruptio placentae in whom at the seventh month of gestation the uterus was removed by a cesarean section. This shows apparently a slight crevice in the uterus in which there are some villi retained. The next slide is taken from the same patient and shows the placental site, and in this site I would call attention particularly to the glands and chronic cells which are present in the lower layers. There is also apparent the beginning of a process of thrombosis in a large vein. This section, taken from a patient at term, shows the decidua with some glands distributed in the deeper layers. These glands had quite a different appearance from the glands in the spongy portion of the decidua. In line with what Dr. Williams has said, I imagine that even at the time of delivery at term these glands are already prepared to proceed with the process of regeneration. This section is taken from the uterus of a woman who had a postpartum hemorrhage which was uncontrolled. I want particularly to call attention to this large artery and the way the contour of the walls indicates that within a short time following delivery the arteries collapse and begin to undergo changes in the placental site. This section is from a woman at full term who had a ruptured uterus and a classic section followed by hysterectomy also for postpartum hemorrhage. Here, again, the placental site shows the ragged and irregular decidua with accumulation of blood and thrombosed vessels. This section

comes from a woman at full term who was delivered and who died two days post partum with acute nephritis and diabetes. This shows the placental site with some thrombosis in the vessels, but there is a hyaline change already beginning in this artery even within two days following delivery. Here also is the placental site with thrombosis and hemorrhage and fibrin deposits, with some regeneration of the decidua. This section represents a rather long jump. I have no intervening material. It shows the uterus of a woman five months post partum. It shows the uterine glands completely regenerated, with some appearance of premenstrual glands and a hyperplastic mucosa. One also sees the difference in the size of the muscle fibers and can compare them with the previous ones and note how completely the hypertrophy of the muscles has disappeared. This section shows the same case, and here I want to call attention to these two small vessels with some persistence of a hyaline change in the vessels. The muscle fibers have reached their normal size again, but at five months there is still persistence of some arterial change. The next section is also from a woman five months post partum and shows the complete regeneration, of course, with the normal appearing endometrium; but this is quite unusual in that these vessels still persist five months post partum.

DR. J. WHITRIDGE WILLIAMS, Baltimore: I am greatly indebted to my friend Dr. Adair for the discussion he has given. Of course, in the few minutes at my disposal I could only sketch the matter in the most cursory way, and the thing that has interested me most is that while the uterus has been studied for several hundred years my observations constitute the first clear-cut description of what happens at the placental site. I could not go into all the details in an hour. Dr. Adair brought up the matter of the arteries, which is another interesting and complicated story. Twenty-five years ago Dr. Goodall of Montreal wrote a long article on their behavior in the pregnant and

Fig. 18.—Completely regenerated endometrium on fifty-first day post partum: all sign of placental site has disappeared; × 75.

puerperal uterus and showed that they underwent very peculiar changes. He had the idea that, as they underwent healing, a new artery developed in the interior of each old one. How far that is true I am unable to say; but such hyaline arteries as Dr. Adair showed occur in all parous women. In many women the terminal ends of the arteries are in the placental site and are thrown off; while the lateral ends are in the uterine wall, and what happens to them depends on circumstances. In some women, especially young women, they disappear promptly. In others, more particularly in women past 30, they do not completetly disappear but remain for the rest of life, so that on microscopic examination of the uterus an experienced person can say that a given woman had either had a baby or had had a large uterine tumor removed, which required an excessive amount of blood, and that after its removal the necessity for the increased blood supply had disappeared, and the vascular changes had followed. I think this more accurate knowledge concerning the placental site will be of great value in studying various conditions during the puerperium, and I might add that the process which I have just outlined occurs only in women who have entirely cast off the product of conception. On the other hand, the retention of a small amount of chorionic tissue interferes with and prolongs the process, and gives rise to changes concerning which I am not yet prepared to speak. Furthermore, I am slowly learning that in the puerperium a number of other things occur on which we are just getting a line, and it seems likely if study of this sort is continued that in the next few years a mass of information may be acquired concerning certain clinical aspects of the puerperium which will be of great importance.

MEDICAL ANALYSIS OF A THOUSAND MARRIAGES *

ROBERT LATOU DICKINSON, M.D.
NEW YORK

Among the large number of volumes on marriage, only two are based on case studies. The extensive social investigation by Katherine Davis [1] and the intensive psychologic inquiry by Gilbert Hamilton [2] elect to omit many of the medical and physical aspects of wedlock. A gynecologist-obstetrician lays stress on these very aspects in his forty year study of marriage.[3] His analysis utilizes 1,098 records with observations ranging from less than one year to more than four decades—the average being seven years—and with entries distributed from childhood to old age (chart 1).

PURPOSE, TYPE OF PERSON, AND METHOD OF OBSERVATION

The purpose of this search for the detail of success or failure in sex adjustment is the eventual making of useful schedules for sex education, for premarital medical instruction, and for texts on conjugal hygiene. Such a study and such a program are part of the new field of preventive gynecology and protective medicine.

The woman under observation is of the American cultural type. She is urban, of good family background and education, a homemaker with a child or two, married to a professional man of moderate income. The social and economic milieu represented averages well above the middle line of humanity in large cities. The inclusion of the few poor is balanced by the inclusion of the few very wealthy, and the few women of limited schooling are balanced by those having the degree of doctor of philosophy.

The material studied was drawn from the case histories of a gynecologist and obstetrician, selected from about 4,000 records of married women seen in private practice. As an anatomist and as a surgeon he was accustomed to getting information directly from the physical make-up. When pelvic structures looked one

* From the National Committee on Maternal Health, Inc., 2 East One Hundred and Third Street, New York.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 10, 1931.

1. Davis, Katharine B.: Sex Factors in the Lives of Twenty-Two Hundred Women, New York, Harper & Brothers, 1929. (Eighty-seven per cent of 1,000 wives reported unequivocal happiness in their marriages.)

2. Hamilton, G. V.: Research in Marriage, New York, Macmillan Company, 1929. (The 100 husbands and 100 wives are known to include a relatively large proportion of the dissatisfied.)

3. Dickinson, R. L., and Beam, L. E.: A Thousand Marriages: A Medical Study of Sex Adjustment, Baltimore, Williams & Wilkins Company, September, 1931.

way or another, the doctor developed some working theories to correlate with questions about the emotional life. These questions brought answers, more questions, more answers. It therefore came about that data of the body, the mind and the emotional life were all collected together—always proceeding from body to mind. Stories of intensive personal experience were thus collected for about a fourth of all the married women patients, the others remaining simply medical case histories. It is characteristic of the fuller psychologic history that it began during a time of crisis in the patient and was

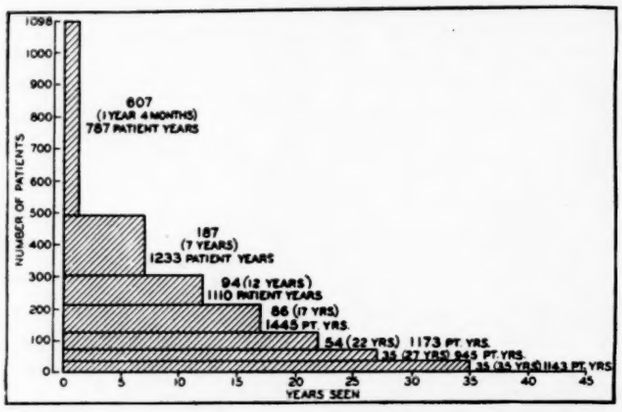

Chart 1.—Observation time for 1,098 patients studied for adjustment in marriage: Patients in five year groups. Base line represents forty-five years, the period of study for the series; each bar represents five year group of patients, seen for average number of years indicated.

frequently continued during periods of emotional stress. It therefore specializes in the acute condition.

One half first came to the doctor for problems of childbearing; one fourth for pelvic growths and inflammations; the remainder for miscellaneous causes presumed to be of pelvic origin. Acute illness is not usual, and, so far as is known, only seven are dead. Menstrual disturbance, usually minor, is noted in about every other one. Fifty-six per cent are pronounced by the doctor as in good general health or are presumed to be in good health since there are no complaints or entries to the contrary. Twenty-seven per cent are below par, chiefly with nervousness of varying degree; this includes those with minor chronic disability, such as apparently arrested tuberculosis. The remaining seventeen per cent are seriously impaired in health; of these some are ill with varying degrees of nervous disorder and seventy are mentally disturbed; there are fifty-four cases of psychoses, four of epilepsy and twelve of insanity to the point of segregation at some time, or one case of institutional insanity in ninety-one cases. The total incidence of venereal disease, usually gonorrhea, is 94 times in 1,098 patients, or 1 in 12.

This incidence of mental disease is not comparable with published estimates for total population because the base of computation is different. But the state's expectation of mental disease to the point of hospitalization for native-born females approximates four cases per hundred.[4] Without statistical comparability, this means that in this respect these patients are rather better off than the run of humanity. There is no way of establishing precise degrees of mental stability.

It is amply demonstrated that the group is socially normal in the ordinary relationships of work and life. The general conclusion is that persons of prolonged education, with the usual background of such persons, dominate; so that it represents what casual description would call a superior type.

The desire for fertility furnishes the most abundant of all the data. The first child was born at about 26½, and the typical woman wanted more. Fear of pregnancy is a difficulty in mating with 300 couples; and abstinence from sexual union for prolonged periods is customary for this reason in forty-two cases.

Throughout the series, conception is controlled, positively and negatively, the responsibility for prevention being assumed by husband and wife in about equal proportions (chart 2). That control is generally successful is shown by the facts that less than one fourth of the couples reported any failure in method and that three fifths of all pregnancies were deliberate. This degree of success is the more striking in that the bulk of the patients represent the era before medical instruction in contraception was general.

The average fertility, taking women over 40 as the norm, is 224 pregnancies per hundred women, of which 63 resulted in abortions and 161 in living children.

Chart 3 shows the total record for all ages, of 855 women, in terms of 100.

These are skewed data, since gynecologic practice always has a large percentage of women coming for sterility, about 25 per cent as against 10 to 15 per cent in the general population. A class known to be low in fertility is not strictly comparable with the census or other available figures. It is suggestive, though not comparable, to read at the same time the birth statistics from similar social groups:

The fertility of 2,294 Vassar alumnae, published in 1924, and of 4,550 Smith alumnae, published in 1926, is estimated as 190 children per hundred married graduates; that of 10,636 Harvard alumni, published in 1926, is 210 children per hundred married men. These

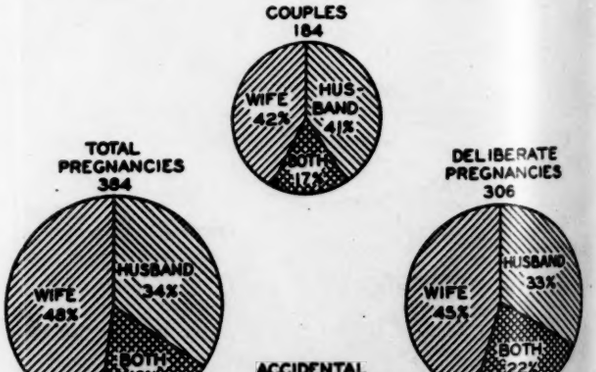

Chart 2.—Controlled fertility: The method of control usually practiced when prevention of conception is desired, whether by wife, husband or both together, is shown in the circles representing first total couples reporting; second, 384 pregnancies; third, 306 deliberate pregnancies; and, fourth, 78 accidental pregnancies. The last circle is the only one that shows anything about the relative success or failure of particular methods.

alumni figures include reports of unfinished families. The fertility of men of Who's Who caliber is now estimated at about 2.7 per capita.[5]

Sterility was the cause for many consultations. One third of all wives bore no living child. The causal factors of sterility even in a single case are from two

4. Pollock, H. M., and Malzberg, Benjamin: Ment. Hyg. **13**: 132 (Jan.) 1929.

5. Huntington, Ellsworth; and Whitney, L. F.: The Builders of America, New York, William Morrow & Co., 1927.

to four, and are too multiple to be here considered; so far as is known they are distributed in this series with fair evenness between husband and wife. Health and nervous balance make no difference in fertility, but there is some tendency for coldness in the love relation to show on the side of the less fertile, and for the satisfactory or at least the not-complaining marriage to show more children (chart 4).

CLASSIFICATION, THEORY AND PREMISES

Turning now to precise classification of the cases in the simplest form, 820 women are married and living

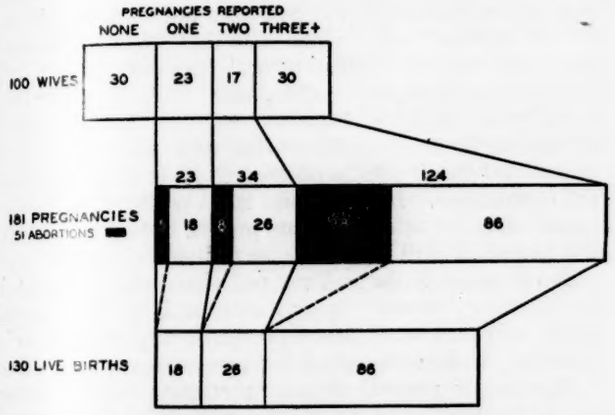

Chart 3.—Pregnancies and outcome: First bar represents distribution of 855 women married over nine months, in terms of 100 wives reporting either no pregnancies or one, two, three or more apiece. Second bar represents distribution of 1,549 pregnancies, using same unit of measure as the wives. The third bar shows the distribution of 1,114 live births, after the deduction of 435 abortions, shown in the black portions of the second bar.

with their husbands, 40 are widowed, 40 are separated or divorced and 200 have been added later as a control group. Of those living with their husbands, 50 brides are excluded and the remaining 770 have been checked on many points, first on the single question: Is the marriage sexually satisfactory?

In round numbers, the answer to this question is distributed in a fifty-fifty ratio. Widows and the separated may also be excluded, since the first look at marriage as past happiness and the second have ended it. This means that 365 made no complaint of any kind and that 30 can be distributed sometimes yes, sometimes no; the remaining 375 were willing to discuss with the doctor what they thought was wrong.

Within the group of those couples dissatisfied with their sexual adjustment are three classes: those in the early stage of experiment, those who want more sexual experience than they are having, and those who want less or, at least, less from the available source in the habitual form.

The average frequency of coitus is the familiar "twice a week"; but this average is made up of instances ranging widely: from 16 per cent reporting "daily or oftener" to 11 per cent reporting "yearly or less." Three fourths of all reported coitus at least once a week, with the single largest group, 23 per cent, at "two or three times" (chart 5).

The habitual duration of intromission is an instant in 12 per cent, under three minutes in 6 per cent, from 5 to ten minutes for 34 per cent, from fifteen to twenty for 17 per cent, and a half-hour or more for 9 per cent.

Duration of orgasm averages under fifteen seconds. The most frequent complaint is that the woman does not reach orgasm. Of 310 patients reporting, more than a fourth had never experienced orgasm with the husband and 14 per cent were having it only "rarely" or "not now." This is to say that, in any five women, two had it, two did not, one had it "sometimes" (chart 5).

The habit of not-orgasm has as a corollary some grade of negative feeling which eventually turns against coitus, perhaps also against the husband in other aspects of marriage. Counting the attitude toward coitus of 329 patients reporting, it is positive (pleasurable, pleasant, agreeable), 49 times; indifferent, 105 times, and negative (dread, disgust, revulsion), 175 times. But we must always remember that the unhappy are the vocal, and the satisfied do not have to ask counsel.

These records of a lack of satisfaction and its results furnished evidence for medical study of the emotional life, beginning with the anatomic-emotional inferences on which inquiry was based. In summary, these are the premises employed:

The hymen, vulva and vagina are believed by this gynecologist to document sex practice to a degree sufficient to give clues about both auto-erotism and coitus. The hymen admitting no more than one adult digit full length is that of anatomic virginity; the introitus of coitus admits the whole of two fingers of the usual male size; that of less than this dimension in marriage, or that of lessening dimensions in a series of observations, indicates a lessening frequency of coitus or a degree of male impotence or feebleness. Increasing as well as diminishing distensibility, other things being equal, is an index to coital behavior. The untorn hymen of the worn-down edge, easily outrolled, means vigor and quantity; the introitus of the nullipara taking four fingers to the whole hand may go beyond the possibilities of the phallus and suggest prolonged manualization. In all the foregoing, it is understood that douche, pessary and prolonged gynecologic treatment with a full-sized speculum will cause some of the same modifications as sex practice.

The vulva may record, in labial contour, in enlargements and in varicosities, the clitoris in range of excur-

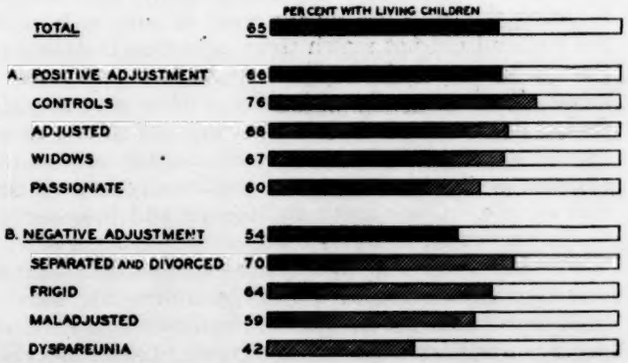

Chart 4.—Effective fertility and marital adjustment: The hatched sections of the bars represent the proportion of each class of adjustment, who had some living children, omitting brides.

sion, the muscles of the pelvic floor in reactions or relaxations, the mammary gland tissues in chronic thickening, the story of years of active self-excitation both as contemporary practice and as historical development. This applies particularly to premarital diagnosis.

The measurements and conformation of the vagina and the pelvic floor muscle groups furnish a correlation to the verbal narrative of coitus, giving some evidence about posture, frequency, method, coital response and capacity for retention of semen in the woman.

These anatomic indications and those modified expressions of them which show in pelvic organs exhibiting erotic signs at gynecologic examination serve to corroborate or cast doubt on the patient's verbal record.

SEXUAL VARIANTS WITHIN MARRIAGE

The division of these marriage groups into experimental, affirmative and negative stages of sexual adjustment excludes the first for the moment and divides the others into two parts quantitatively equal, on which the facts range themselves about as follows:

The essential element for happy and complete union shows in the repeated desire of 1,098 women for sexual expression. Any patient whose case is followed for a reasonable length of time exhibits some form of sex feeling, either actively, passively, as a wish or even as a hatred. To follow the behavior of personality historically and to trace the reasons for its evolution and reactions is to find some degree of capacity for passion in every instance in which time and pains have been given to the search.

Thirty women, who, by their statement and acts, were passionate beyond the average, give the most thought-provoking statement of adjustment to the conditions of married life. Described as of high general capacity,

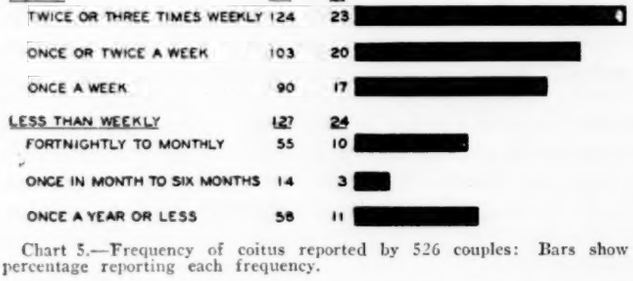
COITUS REPORTED
526 COUPLES
NUMBER
PER CENT OF TOTAL
DAILY OR OFTENER 82 16
WEEKLY 317 60
TWICE OR THREE TIMES WEEKLY 124 23
ONCE OR TWICE A WEEK 103 20
ONCE A WEEK 90 17
LESS THAN WEEKLY 127 24
FORTNIGHTLY TO MONTHLY 55 10
ONCE IN MONTH TO SIX MONTHS 14 3
ONCE A YEAR OR LESS 58 11

Chart 5.—Frequency of coitus reported by 526 couples: Bars show percentage reporting each frequency.

nearly all are mothers and, except as adultery is admitted, they conform to the social conventions. Ignoring the cases merely thwarted in passion because the husband did not match them, attention is drawn to those who may have a genuinely high sexual endowment. Their accounts of passion explain and amplify desire. They reveal the color, texture and stature of an experience which must be considered not merely as the expression of their uniqueness but broadly as a revelation of life. Clues about the feeling and behavior of the less articulate and of the antipassionate begin here.

The 365 wives who are adjusted without complaint to marriage include 100 of the sterile but even so show a little more than the median of fertility; 1.70 children per capita in the after-forty age group. Coitus proceeds in a semiweekly rhythm. Twelve per cent of 164 wives report entire lack of experience of orgasm. Two cases of adultery on the part of the wife appear. The history deals chiefly with objective factors. The patient does not come to the doctor about moral problems or personal affairs but for professional help. The doctor and patient relationship is confined largely to the factual.

The 375 wives who are on the negative side in marriage consist of 100 diagnosed as frigid, 175 who had dyspareunia and 100 who were maladjusted, usually with strongly worded grievance toward the husband or marriage. These are less fertile women. Only 26 per cent of them have two or more living children, while in the first group 40 per cent have that number. Also they are the less expressive sexually. Coitus proceeds in a rhythm of once or twice a week, and 34 per cent of 244 patients report absence of orgasm with the husband. The histories, contrary to the others, are packed with the subjective and are the longest in the series. The patient frequently feels spiritually isolated and is trying to get from the doctor the wherewithal to strengthen the foundations of life.

The difference between the frigid, the maladjusted and the dyspareunic patient, after the cases of physical dyspareunia caused by local inflammation or anatomic difficulty have been excluded, is one of degree in assertion on the negative side. She does not want the pattern of intercourse with which she has become familiar because it is not interesting and does not end well; it leaves her feeling bad afterward. She may say this verbally or with the introitus; may act it; may, when she means this, act in some other way; may inhibit sensation and inner release, although going through external compliance. Her husband lacks perhaps in personal qualities, in vigor and staying power, but certainly lacks the technical skill necessary to change this response.

No organic basis and no functional basis except in the scattered cases of low vitality, fatigue, family care, great spiritual emergency or temporary pelvic indisposition can be established for this proportion of sexual coldness. It records a sex experience usually limited to the husband, and the total meaning of the woman's elaborate recoil seems to be that she thought she was going to be loved by a man of her own nature. Now, in this aspect of marriage and sometimes in others, it appears that she is not.

Separated and divorced wives should be added to this category. In 40 broken marriages, counting children and other partners, 165 persons are concerned. The records of the fertility of the separated are quite comparable with the norm and with other cases. Coitus was unsatisfactory. Peace and confidence never blotted out the memory of sexual shock received before marriage and perpetuated by repetition. The conspicuous difference between this and other groups is the relatively high incidence of venereal disease, sixteen cases, and of adultery, twenty-seven cases.

DETERRENTS TO SEXUAL ADJUSTMENT

Complaints about relatives, money, work, and management of the children and the home are here minimized in favor of the sexual story. They appear only very early before the bride is used to marriage or very late after she has rejected the husband on other counts.

At the root of that difficulty in woman which cannot break down resistance and freely enter into the life of another person there is much evidence of fear. Some impact on the sex side of life to the child or to the little girl lasts forever. Married women at all ages say that they cannot get over the effect of first menses; first ugly news about sex; accident to a friend, sister or mother; the first departure from cautions made on a religious or ethical basis; the husband's first approach; first coitus, male genitals, semen, and knowledge of male sexuality.

This psychic imprint reappears as apprehension, general or specific, not necessarily having anything obvious to do with sex; or it appears as sexual hesitation. Sex is rated as esthetically or morally lower than the rest of life; manual contact lower than phallic contact, and coitus in the light lower than in the darkness. The patient avoids sexual experience at whatever point she is unable to dissolve fear, perhaps even at the initiation.

The effect of extensive educational and religious background, or rather of these influences together with their concomitants, is toward the cultural tabus of fear, withdrawal and isolation. A selection of 114 patients, college graduates, Jewish and Roman Catholic wives and wives of Protestant ministers has 68 per cent of sexual maladjustment as compared to 34 per cent in the rest of the 1,098 patients (chart 6).

From my long practice of premarital instruction the more recent impressions, not yet tabulated, run as follows: Compared with previous decades, in the last eight or ten years there have been fewer inhibitions and shocks; during engagement, great frankness and frequent rousing and sex play short of entry; after marriage, bettered technic and fuller response; general knowledge of control of conception with its removal of fear of accidental pregnancy, yet with little diminution of desire for as many children as finances and health will permit; with provision for an interval between marriage and first pregnancy. All the foregoing are without change in the proportion of devoted love. Coital experimentation before marriage, or before formal engagement, has increased. There are more open liaisons, often enduring over long periods, but anything like promiscuity is very rarely found in the group which the study represents.

Before the organism is ready for union with another it has forms of sexual adventure on its own and, if ultimately disappointed in mating, it returns to the before-marriage state or devises compensations.

The simplest physical compensation for absent, delayed or incomplete coitus is auto-erotism, in the sense of concluding the whole sexual cycle alone, by masturbation, day dreaming or any successful means of excitation. The records are that two out of three patients had sometime had experience of this sexual substitute. In 400 histories there is no notation about auto-erotism, which may be read as "no anatomic signs, no statement." The remaining are divided as: 74 women who showed definite signs of former habit; 335 the signs of continuing habit, and 286 who had the signs and stated the practice either now or formerly.

Individual accounts of auto-erotism occur in the control group and in those who are supposedly adjusted to marriage and are not by any means confined to those who are negative in love. Their fluctuations may be traced from girlhood, through various phases of marital development to a maximum; sometimes in pregnancy, sometimes in widowhood, sometimes when the husband is unfaithful or for other reasons there is no intercourse. The characteristic reported experience has an accompanying play of the imagination and is followed by and associated with a sense of shame. Summarizing, the evidence is that auto-erotism is a typical experience but that its continuance in marriage is exceptional.

A long continued pronounced habit before marriage only occasionally curtails full response to coitus afterward, and this chiefly by keeping the orgasm vulvar rather than vulvovaginal.

Compensation for love impulses thwarted in marriage does not necessarily take the form of requiring physical satisfaction. To atone for spiritual loneliness, compensation magnifies the personality by extraordinary egotism and by material acquisition. Of these attempts, fear, girlish ways, gourmandism, the arts, religion, morals, culture, social and political "causes," the overassumption of family responsibility, worry and financial extravagance are indications told in about 250 cases. Illness in many forms, especially nervous preoccupation with the self, is an indication noted particularly 128 times.

Love for others and attraction for other men are noted less frequently; including the accounts of unconfessed attraction, between fifty and sixty incidents are reported.

CORROBORATION OF THE POSITIVE AND NEGATIVE BY THE NEUTRAL

All the foregoing story of the values of sexual desire, its variations and especially its extremes is corroborated by the evidence of those most near the neutral. Neutral, in this sense, means only those who gave no sexual history of their marriage or who may be excluded because they are at the beginning or end of marital experience; the brides, the widows and the control group.

The bride who seems typical is in a state of erotic confusion. In the redirection of romantic desire into the channels in which it may now be expressed, all the difficulties of pioneering and of reorganization are inherent.

The sexual technic of two average persons appears as a matter of time and growth which has to overcome fear and hesitation and to break down as much as may be of the barriers of individualism. In spite of what good

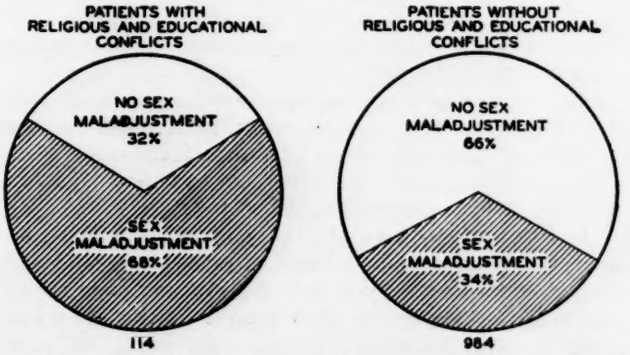

Chart 6.—Proportion of sexual maladjustment according to educational conflicts: First circle shows 114 patients made up of three groups presenting religious exceptions to whole series, in being either Jewish, Roman Catholic, or engaged in Protestant church work of some sort; and one group of women with more than average academic attainment. Second circle represents remainder of series, 984 wives not reporting educational or religious background of unusual sort.

intention can do, there is a period of vacillation and uncertainty. Frequently these women still keep their own secrets from the man and are responsive with the intelligence but not with the instincts. Seventeen of the fifty brides under discussion had not reached orgasm, and their love interests seemed to be freezing into a period of regression.

During the last decade, all these difficulties of the bride have been much less in evidence.

The forty widows, widows of some ten or twelve years, are on the side of happy adjustment in marriage. The sexual experience is commonly a delightful memory recalled as of greater than average frequency and intensity. Sexual desire persists perhaps to the point of taking a lover against better judgment, but idealization of the husband prevents remarriage.

The control group of 200 cases drawn from the medical history files by statistical methods was originally made for comparison with 200 cases of the sexually unhappy, the frigid and the maladjusted. These control histories lack question, comment or attempt to get the sexual story, but practically they seem quite like the other cases. They are rather less prosperous, their health is a little less satisfactory, their fertility a little higher, 1.89 per capita in the over forty group. One

in four stated some problem of sexual maladjustment, inclining toward coldness and alienation. The emotional tone of the narratives is less assertive than in the sex histories but conveys the same impression.

CONCLUSIONS

1. The sole method for planning intelligent prevention and treatment of maladjustment in marriage is systematic study of full case histories of success and failure. Though only 4 per cent came to the point of divorce or separation, nearly half showed some degree of difficulty: one sixth had considerable persistent distress in intercourse, eighteen wives were long-time married virgins, not from impotence but from ignorance.

To define disorders specifically is the first step toward a program of forestalling them: in this case, by sex education of parents and educators, of children and adolescents and engaged couples; and by careful premarital examination, and by the prompt recognition that is necessary for cure.[6]

2. The series, drawn from the socially normal, represents chiefly the educated urban couple, with the wife in good general health but needing the advice of an obstetrician or gynecologist.

3. Fertility has an important psychosexual correlation with coitus, since, in a type wherein the woman has a relatively high degree of independence, it tends to vary as the sexual harmony varies.

4. The woman has a capacity for sexual desire, lifelong, inconsistent and fluctuating, and found in every individual fully studied. The manifestations of this desire and her ability to turn them to happy issues are extraordinarily dependent on her early life.

5. Even when there are no children, complete unity in marriage stands on a basis of sexual unity. Bodily expressions of love, in their finesse and variety and power, are reflected in other phases of the life of the couple.

6. Sexual abstinence in marriage ordinarily is not practical. It has reactions in egotism. These take the direction of idiosyncrasy of opinion or act, derangement of health or disturbance of the emotional life. Abstinence is practiced from conviction by about 2 per cent of the series.

7. While intimate sex relations are most completely welcomed by women when they are adjusted to personality as a whole, there is a definite physical technic that can be developed and kept perfect only through experiment. The physical difficulty typical of the couples in our series is that their common knowledge and the husband's technic are not adequate, and anatomic considerations have received scant attention. There is also a definite psychologic technic of surmounting barriers and entering into the feelings of another. The mental balk is in making sex fit the rest of life, or in straight facing of need of training in adaptation and expertness.

8. The sexual difficulties revealed are not in the main organic in the woman and, save in exceptional cases, not functional. They are variants of mental and emotional behavior.

9. So far as emotion and clamor of complaint push to the front of the stage, this analysis is likely to take its place as one of the studies of unhappiness in marriage. But this is not actually or statistically the case and the figures deny it. Moreover, it must not be forgotten that, of the maladjustments here shown, many are passing or relievable, and most are preventable.

10. Physicians face a medical obligation toward further intensive inquiry and toward the training of a personnel equipped to conduct the marriage advice center, and to teach in the physicians' office chair. We must do our part to prevent the preventable, and to foster successful and stable unions.

2 East One Hundred and Third Street.

6. Dickinson, R. L.: Premarital Examination as Routine Preventive Gynecology, Am. J. Obst. & Gynec. **16**: 631 (Nov.) 1928.

ABSTRACT OF DISCUSSION

Dr. Adolf Meyer, Baltimore: Our association is to be congratulated that one of our members has offered truly observational data from a long and conscientious experience on a chapter in great need of the most scrupulously factual treatment. Today there is much individual thinking, much individual experimentation, and yet little control, little record, little of that which would help build up correct ideas of the facts as they are. In my efforts to bring to medical students a realization of what psychobiology, the knowledge of human functioning, means and gives to physicians, I have found that there is a strong tendency to solve problems that really are lifelong, with some relatively meager data and information and a great deal of reasoning and inferring which sometimes with mere fancy and exhortation goes far ahead of a real familiarity with the multiplicity of actual situations that have got to be met. It is necessary to furnish growing young people, and the mature as well, with a collection of real experiences, with which to instil in them the realization of the importance of correct records of facts and not merely of thinking. On the other hand, it is undoubtedly necessary that there should be a great deal more worthwhile thought and less of the mere copying of a few inferences from psychopathology, i. e., pathology of personality functions, or from complaints and their remedies, before one can form a conclusion as to the meaning of the whole situation and possible ultimate developments and plans for the future. We want to be able to offer the inquirer samples and patterns of real occurrences instead of mere exhortations and moralizing. The data that Dr. Dickinson gives come probably closer to what average experience with the rank and file of people may mean than a great deal of the information from self-chosen volunteers that has so far been collected by Hamilton, by Katharine Bement Davis and by other investigators. It will be important to collect far more data, especially also of the normal, by creating full confidence on the part of the public that it is not going to be detrimental to keep some record data, and that it will not be damaging to reputation to communicate the actual facts to the proper centers in which investigations are carried on in an objective and sensible fashion.

It is unfortunate that today the idea prevails that in the sexual life almost the only topic to be considered is that of psychopathology, and, in turn, that sex is that part of our life to which everything in psychopathology is to be referred. We should realize that we have to recognize a wide range of standards that are compatible with normality. On the other hand, we have to recognize that when we see miscarriages of attempts at normality we do not necessarily look on merely one or another item of technic or of planning as the one responsible factor. The study that Dr. Dickinson has made impresses me particularly with the necessity that physicians formulate for their work plans of examination of these facts, which will take a wide enough range of view over the whole life of the individual. If that is done, I think we shall then develop the possibility of studying and treating particular points in a broader setting, free from the imputation of the too exclusive terribleness of one or another difficulty, or, on the other hand, an intimation of the practical obligation of sex activity, under the idea that the sex problem might already be solved with so-called birth control, where much of the required work has still got to be done. Without a wise and broad setting, there will be as much pathology of birth control as there will be pathology of uncontrolled and totally unguided sex life. It is therefore essential that we as physicians state frankly that we do not know it all, that those who write about happiness in marriage and about happiness

in sex life do not always prove their case in their own lives, that there is particularly a need of knowing more about those who are successful and not only those who are whining or who are troubled innocently. Above all things we have to recognize that we are dealing here with a field of human life in which we cannot abandon responsibility, a responsibility of study, but also a responsibility of action and a responsibility of teaching. To assume that we have merely to dictate one or a few schemes of technic to the great variety of human beings would be absurd. We have to try to collect data such as Dr. Dickinson has collected in his practice, and more and more in a presentation of cross-sections of average communities and with less preponderance of mere pathology. I, for one, feel that we are approaching a time when there will be less of an obsession of short-sighted sexual experimentation, more confidence in some of the wisdom of tradition, and more interest in improvement of education and use of what we do know.

DR. MARIE PICHEL LEVINSON, New York: I could not resist the opportunity to represent the feminine side of the practice of medicine, because I feel that we are approached much more frequently than the male physicians with sex problems of our patients. After spending four years in Margaret Sanger's birth control clinic doing contraceptive work and in the gynecologic clinic at Mount Sinai Hospital and four years in private practice before I became interested in gynecology and sexology, I have found that the male physicians, a good many of them at least, do not give their patients an opportunity to discuss sex matters which may be as important as if not more important than physical disabilities. A good many of the male physicians have begun the practice of referring to women physicians the wives of husbands who come to them with marital incompatibilities. While I think that the physician needs education along the lines of the paper given by Dr. Dickinson, and also along the lines of modern contraceptive technic and the part it plays in the happiness of marital relationships, I feel that a few practical pointers would be worth while bringing to attention. We hear much discussion of the question of marital clinics, and premarital clinics. I, for one, and a good many other women physicians and probably a lot of male physicians, have quietly been doing just that sort of work in private practice. I have many young couples come for physical examinations who want Wassermann blood tests. Especially the college graduates want to have advice on what is normal and what is abnormal so far as marital relations go. We have a frank discussion and I let them talk all they want to. They go away from the office feeling much better satisfied because of the information obtained. I think this is just as important a part of the practice and art of medicine as any other field.

DR. ROBERT L. DICKINSON, New York: I want to thank Dr. Meyer not only for his cordiality at this time, but also for his long service to the Committee on Marital Health. He spoke of the books on birth control and other germane subjects, so I do feel that there is a center both here and in Cambridge in England that is making serious study of these problems and can present data from which one can draw one's own conclusions.

Vertebrate Evolution.—The known record of fossilized remains shows that the ostracoderms, which were the immediate forerunners of the vertebrates, were already in existence in the Ordovician and Silurian periods, perhaps half a billion years distant from the present day. Even at that inconceivably remote epoch the most fundamental problem of vertebrate evolution had already been solved and with regard to the ground-plan of their anatomy the ostracoderms were actually far nearer to man than they were to the one-celled starting point of life. For these fishlike chordates were already bilaterally symmetrical, with head and tail and the ability to move in a forward direction. In their heads they had paired sense organs representing the senses of smell, vision and balance, while the main divisions of their brains, as shown by study of their fossilized brain casts, were of the primitive vertebrate type; the mouth, gill chamber and digestive tract were beneath the brain and spinal cord and the primary locomotor organs consisted of a closely packed series of zigzag muscle segments on either side of the long axis of the body.—Cowdry, E. V.: Human Biology and Racial Welfare, New York, Paul B. Hoeber, Inc., 1930.

THE RELATION OF INJURY AND GLIOMA OF THE BRAIN *

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AND
JAMES W. KERNOHAN, M.B. (BELFAST)
ROCHESTER, MINN.

The question of the relationship between injury to the head and the later development of cerebral tumor is by no means a simple one to answer. Nevertheless, it has become of increasing importance from the standpoints both of workman's compensation and of insurance claims involving double indemnity when death can be proved as being due to injury.

From the medicolegal standpoint, counsel in a given case may elect to look up the subject in the more easily available textbooks. Therein may be found considerable difference of opinion, actually conflicting testimony and much that is guarded and indefinite. For example, Gowers [1] had little doubt that trauma occasionally is the immediate excitant of a growth, and Bramwell [2] considered that in some cases injury was undoubtedly a proximate cause. Ten years later his son, Edwin Bramwell,[3] stated that all available data usually fail to afford evidence which justifies an assumption of cause and effect. Kennedy [4] preferred the Scotch verdict of "not proven," and Hoppe [5] thought that there was hardly a scientific basis for a causal relationship between injury and cerebral tumor. Oppenheim [6] was equally certain that a wound of the head may form the basis of tumor, and Jelliffe and White [7] regarded this possibility as justifiably open to serious consideration. Cushing [8] considered the relationship between trauma and the first appearance of symptoms of cerebral tumor as a coincidence that occurs too often to be ignored, and Bing [9] made somewhat the same statement. Ewing [10] definitely stated that trauma may be the direct excitatory cause of cerebral tumor and that cerebral hemorrhage or contusion may pass directly into a tumor. Bruns [11] was much more cautious and remarked that ignorance of the actual cause of cerebral tumor causes physicians to regard trauma as of sufficient etiologic moment. He would not say that trauma could not be the cause of tumor but thought it was seldom the case and difficult to prove. Because of these conflicting opinions, and in view of recent progress in clinical and pathologic data regarding cerebral tumors, it was thought worth while to reopen the discussion.

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* From the Section on Neurology and the Section on Pathologic Anatomy, the Mayo Clinic.

* Read before the Section on Nervous and Mental Diseases at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

1. Gowers, W. R.: A Manual of Diseases of the Nervous System, Philadelphia, P. Blakiston's Son & Company, 1888, p. 871.
2. Bramwell, Byron: Intracranial Tumours, in Albutt, Clifford; and Rolleston, H. D.: A System of Medicine, London, Macmillan Co. **8**: 266-290, 1910.
3. Bramwell, Edwin: Tumors of the Brain, in Oxford Medicine, New York, Oxford University Press **6**: 137-215, 1920.
4. Kennedy, Foster: Tumors of the Intracranial Cavity, in Nelson Loose-Leaf Medicine, New York, Thomas Nelson & Sons **6**: 119-136, 1920.
5. Hoppe, H. H.: Brain Tumors, in Tice, Frederick: Practice of Medicine, Hagerstown, W. F. Prior Company **9**: 631-707, 1923.
6. Oppenheim, Hermann: Text Book of Nervous Diseases, London, T. N. Foulis **2**: 923, 1911.
7. Jelliffe, S. E., and White, W. A.: Diseases of the Nervous System, Philadelphia, Lea & Febiger, 1923, p. 731.
8. Cushing, Harvey: Intracranial Tumors, in Osler, William: Modern Medicine, Philadelphia, Lea & Febiger **6**: 222-254, 1928.
9. Bing, Robert: A Textbook of Nervous Diseases, New York, Rebman Company, 1915, p. 289.
10. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1928, p. 424.
11. Bruns, Ludwig: Die Geschwülste des Nervensystems, Berlin, S. Karger, 1908, pp. 64-67.

A series of 431 cases of glioma of the brain was assembled. In each case a complete clinical history had been obtained, and general and neurologic examinations had been made. The diagnosis and site of the tumor had been proved by operation or necropsy. Cases were selected only if ample tissue had been obtained to prove the existence of tumor and to classify it according to more recent standards. In the taking of the clinical history, each patient or the responsible relatives had been definitely asked concerning the injury, its nature, severity and situation, and the time relations were noted. External scars of injury had been noted, and at operation or necropsy residual traces of injury were sought. For various reasons the study was confined to tumors of the glioma group. This total of 431 cases of cerebral glioma yielded 58 cases (13.4 per cent) in which the history revealed one or more injuries to the head occurring at some time in the life of the patient. These cases were then tabulated for all clinical, surgical and pathologic data that might have a bearing on the problem.

ANALYSIS OF MATERIALS

Before any causal relationship was assumed between the injury and the tumor in a given case, certain criteria had to be established. Ewing[10] stated that according to the French statutes five conditions must be satisfied: (1) the authenticity and the sufficient significance of the trauma; (2) previous integrity of the wounded part; (3) a reasonable time relation, three weeks to three years, or more in certain cases; (4) continuity of pathologic changes or symptoms in the wounded part and the appearance of tumor, and (5) microscopic proof of the existence of the tumor. As applied to cerebral tumors these rules have been modified by Adler,[12] Mendel[13] and von Monakow,[14] who have claimed the existence of cases satisfying these requirements.

In our series of cases a somewhat similar plan was followed; both clinical and pathologic requirements are included in the following rules: 1. The head injury must be of reasonable severity. 2. It must have been established beyond doubt that the patient had had no symptoms or signs suggesting cerebral disease before the occurrence of the injury. 3. There must be a latent period of at least a few weeks between the date of injury and the first appearance of progressive symptoms suggesting cerebral tumor; the patient need not be free of symptoms during the latent period, but progression of symptoms must not date from the injury. 4. There must be microscopic proof of the existence of tumor. 5. The rate of growth of the tumor as estimated by current standards must be in correct relation with the period of time elapsing between the injury and the earliest microscopic diagnosis of tumor. It is obvious in so controversial a subject that any law laid down is open to discussion, but some set of standards must be accepted before direct cause and effect is assumed. The fifty-eight cases of cerebral glioma in which there was a history of injury were reviewed according to the foregoing rules, which excluded thirty-seven cases. It is of some interest to see how the rules affected the claim of a causal relationship between the injury and the tumor which developed later.

According to the first rule, an injury of reasonable severity is demanded. Unfortunately, there is seldom a possibility of accurately gaging the degree of severity of a cerebral injury except by its effect on the patient's actions after the blow and by the external manifestations of trauma. In this study no case was excluded if a description was given in good faith of a seemingly relatively trivial blow. This is entirely different from fraudulent claims for damages or if conscious exaggeration was made to further demands for compensation. The injuries were classified as mild or severe, and loss of consciousness was the dividing line. Among the fifty-eight cases in the series, the injury was mild in forty-three. In fourteen cases the patients were rendered unconscious for a relatively short time. In only one case was injury severe enough to make the patient unconscious for hours and to incapacitate him for weeks. Severe injuries, as war wounds, were not observed; nevertheless the later development of tumor made an almost forgotten blow appear of tremendous significance to the patients. Only thirteen patients mentioned scars from previous cuts, gashes and abrasions of the scalp and forehead. Altogether, about two thirds of the patients had had minor injuries not requiring prolonged medical care.

According to the second rule, seven cases in the series were excluded. The history furnished definite evidence of cerebral disease existing for an appreciable period prior to injury. A much more difficult problem comes up when the date of injury and that of the first signs of cerebral tumor are apparently coincidental.

According to the third rule, fifteen cases were excluded. There was not a sufficient period between the injury and the first signs of cerebral glioma to allow for the birth of the tumor and its subsequent progression to the point of causing symptoms. There is obviously a period in the life history of any cerebral glioma when it is as yet too small to produce symptoms. It may later manifest itself by disturbing bodily function, so that the first sign of tumor is a fall with injury to the head. However, the tumor will from that time on usually continue to evince progressive symptoms, raising the suspicion that all was not well with the patient when he fell. Further, although a convulsion due to cerebral tumor may be the cause of the injury, or a stumble may be due to cerebellar ataxia, it is also possible that an injury may occur seemingly unrelated to the patient's abnormal actions. By quarrelsome behavior he may provoke another to strike him, he may stumble against a kicking horse, he may misjudge the speed of traffic in walking across the street, or be injured by machinery hitherto handled in perfect safety. It requires careful analysis of the history to bring out these points, but at any rate the progression of symptoms immediately following injury to the head strongly suggests that the tumor was already present when the injury occurred. An illustrative case follows:

CASE 1.—A man, aged 29, came to the Mayo Clinic, Oct. 19, 1928, because of weakness of the right lower extremity, with convulsions. Nine months before, while filling a gasoline truck, he became unconscious and slid off the truck, striking his occiput on the ground. He regained consciousness in a few minutes, resumed work and considered the fall as due to his being overcome by gasoline fumes. Four hours later he fell again in a general convulsion, which was repeated two or three times in the next twenty-four hours. After a week in bed he again resumed work, but about the same time jacksonian convulsions commenced in the right foot and continued to the time of examination, with increasing weakness in the right foot and leg. He had flaccid paralysis of the right lower extremity, with anesthesia up to the knee. Jacksonian convulsions occurred every few hours. Exploration of the left

12. Adler: Ueber das Auftreten von Hirngeschwülsten nach Kopfverletzungen, Arch. f. Unfallheilk. **2**: 189-225, 1898.
13. Mendel, quoted by Wilson (footnote 16).
14. von Monakow, C.: Gliom und Schädeltrauma; Motiviertes Gutachten erstattet an das Eidgenössiche Versicherungsgericht in Luzern über den Streitfall des Obersten B., Schweiz. Arch. f. Neurol. u. Psychiat. **14**: 289-300, 1924.

frontoparietal region revealed a large, infiltrating glioma (spongioblastoma multiforme) near the upper margin of the hemisphere and involving both motor and sensory portions of the cortex.

According to the fourth rule, microscopic proof of tumor is necessary, since, following injury, a few conditions may simulate tumor. As an example may be mentioned the progressive, diffuse gliosis that occurs in brain tissue under certain conditions, notably following trauma. Moersch [15] has reported a good example of this syndrome and has reviewed the subject in general. Clinical evidence of tumor is therefore not sufficient as proof of its existence in a given case. In this series, since only proved cases were included, this factor does not enter into consideration.

According to the fifth rule, fifteen cases were excluded. Some similarity in time must be expected between the duration of symptoms dating from the injury and the presumptive life history of the tumor. Four of the fifteen cases were eliminated because the tumor had probably been present for years, and the history of the patient from the time of injury to the discovery of the tumor at necropsy or operation was only a matter of weeks or months, as illustrated in case 2:

CASE 2.—A youth, aged 15, was brought to the Mayo Clinic because of headaches and ataxia. Nine weeks previously he had been vaulting with a pole when the pole broke, landing him on the vertex. He was unconscious a few minutes but recovered and was able to walk home. A week later, frontal headaches appeared; they became increasingly severe and were associated with vomiting. His vision became poor and his gait gradually became ataxic. A week prior to his visit to the clinic he became confined to bed. Examination disclosed bilateral papilledema, ataxic gait and general incoordination of the cerebellar type. Cerebellar exploration revealed a glioma of the vermis cerebelli, a slow-growing tumor which probably had been present for years. The histologic diagnosis was astrocytoma.

Less certain cases are those in which the patient was injured ten or twenty years before and a highly malignant tumor was found that could have existed only a few months. Proponents of the theory of injury as a cause of glioma may assume the existence of a scar from the previous injury and the tumor being brought into being later by the scar. As yet this is by no means proved, and, since the majority of the injuries in our series were mild, rightly or wrongly eleven other cases were excluded. It might be argued that originally the tumor had been slow-growing and free from symptoms but changed its type toward the end and grew rapidly. There was no histologic proof of this in any of the cases in question, and no obvious reason was manifested why such a change should occur. Case 3 is illustrative:

CASE 3.—A man, aged 40, came to the Mayo Clinic, May 11, 1925, because of jacksonian convulsions on the right side of the face and in the right arm, and increasing difficulty in speech for six months. Thirteen years before admission, while changing an automobile tire in the road, he was knocked down by a passing car and stunned but not rendered unconscious, and his scalp was cut over the vertex. He recovered sufficiently to drive home. The wounds healed rapidly and up to six months before examination he had no trouble with his head. A week before, severe headaches, increased difficulty of speech, numbness of the right arm, and slight weakness appeared. Operation revealed a large infiltrating spongioblastoma multiforme in the left temporoparietal region, and part of it was removed.

15. Moersch, F. P.: Diffuse Glioma (Gliosis): Report of Two Cases, J. Nerv. & Ment. Dis. **63**: 343-351 (April) 1926.

The site of the tumor in relation to the site of injury has been often stressed as important evidence of causal relationship of injury. Since injuries are not confined to the original site, this argument has been used to explain the presence of tumors remote from injury as due to contrecoup, and so forth. In this consideration no importance is attached to the proximity of the tumor to the region injured; the actual region was unknown in ten of fifty-eight cases. In nine cases the tumor was found directly under the injured part of the skull; in fifteen cases it was relatively close, but in twenty-four it was remote from the alleged site of injury.

Search was made for gross and microscopic evidence of old injury and the possibility was considered of tumors arising in the site of the injury in at least a few cases. This investigation was beset with difficulties, for the growing tumor may not only obliterate former signs of injury but, by its effect on the brain tissue, such as necrosis, hemorrhage and infarction, simulate injury. The meninges were also examined for hemorrhage and contusion. The majority of injuries were relatively slight, and altogether there was no satisfactory evidence even of the coexistence of signs of old injury and tumor, let alone its origin from injured brain tissue.

Of 431 proved cases of glioma of the brain, a history of injury was obtained in 58. After critical analysis, twenty-one cases (4.8 per cent) were accepted in which, for purpose of argument, one might assume a causal relationship between the injury and the tumor. Adler,[12] who reported 8.8 per cent of 1,086 cases fulfilling his specified conditions of acceptance, probably was less stringent in accepting or rejecting cases suggesting a causal relationship. Case 4 represents such an apparent relationship:

CASE 4.—A man, aged 34, came to the Mayo Clinic, Sept. 18, 1923, because of headaches, vomiting and visual disturbance. Nine months previously, while he was firing a locomotive, a lump of coal weighing about 25 pounds fell from the tender, a distance of about 10 or 12 feet, and struck him on the vertex, cutting a gash which bled profusely. He was stunned but was not unconscious; he was able to resume work in a few minutes and finished his run as usual. Thereafter he continued to have a dull headache, and his wife noticed that he was more irritable and was often quarrelsome and abusive. Complete changes in mentality gradually appeared. Five months before admission he became irresponsible, paid little attention to finances, and neglected his work. Two months before, transient attacks of numbness on the right side of the body had occurred. Vomiting had appeared a month before and the headaches became greatly aggravated. Mental changes increased to the point that he became completely irrational. Examination disclosed a small healed scar on the left side of the vertex, midway between the glabella and the nasion, and a choked disk on both sides, of 4 diopters. There were no outstanding localizing symptoms other than mental changes. Craniotomy showed a large, purplish, infiltrating vascular glioma in the left frontal region, without definite line of demarcation. The patient died, October 6; necropsy substantiated the operative observations and also showed that the tumor extended into the anterior portion of the corpus callosum and the frontal lobe on the opposite side. Histologic diagnosis of the tumor was spongioblastoma.

CONTROL CASES

Most articles on the subject emphasize the apparent frequency of trauma to the head in cases of cerebral glioma. Its frequency in other diseases or actually in the general population is not mentioned. Some standard of comparison is needed before it can be assumed that cerebral glioma is the result of injury to the head. Accordingly, 431 consecutive patients afflicted with various diseases (cases of proved cerebral tumor were

excluded) were questioned with regard to injuries to the head. Forty-five patients (10.4 per cent) admitted having had such injury some time in their lives. Thirty-three of the patients had sustained mild injuries; seven, moderate, and five, severe.

It might be said that some of these patients came to the clinic specifically because of injury to the head and, therefore, influenced the figures. But, if a group of patients were selected who had a disease which could not reasonably be attributed to injury to the head, the incidence probably would be just as high and yet a causal relationship would not be considered. Since such a group was not available, it was considered worth while to take a group of 200 presumably normal persons and find the incidence of injury to the head. It was attempted to select subjects of corresponding age, sex and occupation to the group of 431 cases of glioma. The lapse of time since injury was noted in each instance and the severity of the injury was graded.

Seventy-one of the 200 normal persons (35.5 per cent) admitted at some time having had an injury to the head; 44 had had minor injuries, 15 moderately severe injuries and 12 severe injuries. The average time since injury was ten and ninety-seven hundredths years, thus allowing reasonable time for the development of a tumor.

These data can be used to compare the incidence of injury to the head in the groups studied and indirectly to consider the apparent results of the injuries. The incidence of injury to the head in the cases of tumor was 13.4 per cent and, in cases without tumor, 10.2 per cent; both were lower than that in presumably normal persons (35.5 per cent). The relative severity of injuries in the three groups did not differ greatly, being actually higher in normal persons. In the light of these data the reiterated statement that many patients with glioma of the brain have a history of injury to the head means nothing, and the mere incidence of injury to the head can have no influence as an argument for a causal connection.

From the standpoint of the smaller group of 4.8 per cent of cases of glioma in which, after satisfying the criteria laid down, injury may be accepted for purpose of argument as a cause, comparison should be made with the control series and a different line of reasoning entered on.

In 431 cases of cerebral glioma the injury is assumed to have caused the growth in 4.8 per cent of cases; yet, in 10.2 per cent of 431 cases without cerebral tumor, injury had also occurred and had not as yet produced tumor; equally significant is the fact that 35.5 per cent of 200 normal persons had sustained injuries to the head many years before and for some reason or other the expected tumor had not yet made its appearance. Must one assume that the injury in cases of cerebral glioma was peculiar and different from the others, or were the patients peculiarly predisposed to the development of the growth? To answer this brings up the consideration of the relative frequency with which glioma of the brain follows well established injuries to the head. The current literature was examined for well authenticated series of patients with injury to the head who had been carefully observed over a period of years.

COMMENT

Too frequently, argument has been directed from the tumor to antecedent events. Considering the incidence of injury to the head in the general population, according to our study there is about a 35.5 per cent chance of a patient with cerebral glioma receiving an injury to be remembered later when symptoms direct attention to the head. A much better argument is to reason from the established occurrence of cerebral injury to the possibility of the development of cerebral glioma later.

A tremendous number of cerebral injuries occurred in the Great War, and the many observations that have been made in the last seventeen years should be productive of enough records of cases of cerebral glioma following these injuries to strengthen the claim that tumor is a common sequela of injury. Significantly, however, there is a dearth of such reports, and one is forced to realize that tumor as a sequela of cerebral injury is an excessively rare phenomenon. Wilson [16] commented on this and stated that, in the nine years during which he observed scores of such injuries, he had never seen an instance of consecutive intracranial neoplasm. Further, he considered the idea that trauma may cause cerebral tumors as unjustified and obsolete. Villaret and Bailby [17] observed for ten or twelve years 500 cases of cerebral injury due to war and did not mention cerebral tumor as a sequela. Equally silent is Rawling,[18] who observed 775 cases of gunshot injury to the brain for two years, and Michael,[19] who reported 100 cases observed for four years without noting the appearance of tumor following injury. In civil life, Schück [20] observed 118 cases for more than three years; Beekman [21] observed 234 cases of cerebral injury in children for from two months to five years, and Strecker and Ebaugh [22] observed thirty-one children for from one year to more than ten years, and in none of the cases did cerebral tumor occur. Reynolds [23] quoted Jefferson as saying that he had attended about 1,000 patients, both civil and military, with injury to the head, and had encountered only three cases of cerebral tumor. In these three cases he considered that the injury had only an aggravating effect on a preexisting tumor. Deaths reported in the foregoing series were all due to causes other than tumor. It would appear that there is only slight, if any, chance of the development of cerebral glioma in cases of injury to the head.

At variance with the foregoing, however, is the extremely interesting report of Neubürger.[24] He examined the brains of twenty-one soldiers who had died following gunshot wound of the brain. He found two brains with cerebral glioma superimposed on the old injury. In one case the tumor arose at the site of the original entrance wound; in the other it appeared at the opposite side, presumably arising from a part injured by contrecoup. Both cases apparently fulfilled the law requiring continuity of pathologic changes or symptoms in the wounded part, with the appearance of tumor. Neubürger considered these the first two cases recorded in which the principle of traumatic origin of gliomas had been supported by direct evidence. He argued, however, also for a congenital predisposi-

16. Wilson, S. A. K.: Rôle of Trauma in the Etiology of Organic and Functional Nervous Disease, J. A. M. A. **81:** 2172-2179 (Dec. 29) 1923.

17. Villaret, M., and Bailby, J.: L'avenir des traumatisés cranio-cérébraux (basé sur l'étude selectionnée de 500 cas revus dix à douze ans après la blessure), Presse méd. **35:** 289 (March 5) 1927.

18. Rawling, L. B.: The Remote Effects of Gunshot Wounds of the Head, Brit. J. Surg. **10:** 93-126 (July) 1922.

19. Michael, J. C.: Old Head Injury Case: A Clinical Study of One Hundred Cases, J. A. M. A. **80:** 1047-1050 (April 14) 1923.

20. Schück, Franz: Kopfsverletzungen: Bericht über 300 Fälle, Arch. f. klin. Chir. **153:** 77-93, 1928.

21. Beekman, Fenwick: Head Injuries in Children: An Analysis of 331 Cases with Especial Reference to End Results, Ann. Surg. **87:** 355-363 (March) 1928.

22. Strecker, E. A., and Ebaugh, F. G.: Neuropsychiatric Sequelae of Cerebral Trauma in Children, Arch. Neurol. & Psychiat. **12:** 443-453 (Oct.) 1924.

23. Reynolds, E. S.: Trauma as a Possible Cause of Brain Tumour, Lancet **2:** 13-14 (July 7) 1923.

24. Neubürger, Karl: Ueber das Auftreten von Gliomen nach Kriegsschussverletzungen des Gehiems, München. med. Wchnschr. **72:** 508-510 (March 27) 1925.

tion on the part of these brains to such growth following injury.

Von Hasselbach [25] reported the case of a man, struck in the face by a fragment of shell, who died twelve years later of ependymoma of the fourth ventricle. The association here is by no means as suggestive. Von Monakow gave favorable testimony for the claim of an officer who had fallen from a horse on the right side of his head and died four years later from glioma in the right temporal lobe. The brain was free from signs of injury. Von Monakow strongly supported the idea of trauma as influencing the genesis of tumor and considered the brain as tending to respond in this manner more than any other organ. The only other cases of glioma following injury to the head recently reported and not in older bibliographies are those of Ganz,[26] Reynolds, Eckel [27] and Wilson. Ganz and Reynolds were doubtful as to any relationship, and Eckel and Wilson emphatically denied that there was any connection between the antecedent injury and the later appearing tumor. Altogether, the vast array of cases of injury of the brain sustained during the war and observed afterward does not seem to be particularly fruitful of cerebral gliomas and, with the exception of Neubürger's cases, the few recorded are not above the suspicion of being mere coincidences. Further, Neubürger invoked the aid of a suggestion that the brains in which tumor develops following injury were especially predisposed to tumor because of a constitutionally abnormal nervous system. Apparently, by this means the author explained the rarity of occurrence of such a sequence. To assume a predisposing cause seems to be begging the question, for the greater the predisposition the more likely the development of tumors, regardless of trauma.

On a broader scale and further consideration of tumors of the brain as a possible sequela of injury to the head, one must consider forms of business and pleasure in which injury to the head is likely to occur. Although interesting degenerative diseases have been described by Martland [28] as occurring in prize fighters, cerebral tumor has not been noticed with any particular frequency. Miners are particularly prone to such injuries, and any boy who has excelled in football and played continuously through his college years sooner or later gets a severe blow on the head. So far, a high incidence of cerebral tumor among these people has not been reported. Children frequently fall and injure themselves and, even excluding the original trauma which occurs at birth, there is scarcely a child who has not at one time or other been struck on the head. Even assuming a certain percentage of predispositions to cerebral tumor in these cases, the incidence of cerebral tumor in children, according to Cushing,[29] is about in the proportion of one child to seven adults. If injury was a cause only in the congenitally predisposed, one would expect children to have a high incidence of tumor, just as the majority of the scars on the face and head were acquired in reckless childhood. Finally, considering the amniotic fluid as a perfect water cushion and the fetus safely ensconced therein free from direct injury, it would be hard to explain tumors of congenital origin.

25. von Hasselbach, Hanskarl: Ependymäres Gliom des 4. Ventrikels: Zugleich ein Beitrag zur Frage des Zusammenhanges zwischen Schädeltrauma und Hirntumor, Beitr. z. path. Anat. u. z. allg. Path. **86**: 120-134 (Jan. 3) 1931.

26. Ganz, R.: Gliom und Trauma, Monatschr. f. Unfallheilk. **34**: 109-114 (May) 1927.

27. Eckel, J. L.: The Aftermath of Head Injuries, New York State J. Med. **28**: 771-777 (July 1) 1928.

28. Martland, H. S.: Punch Drunk, J. A. M. A. **91**: 1103-1107 (Oct. 13) 1928.

29. Cushing, Harvey: The Intracranial Tumors of Preadolescence, Am. J. Dis. Child. **33**: 551-584 (April) 1927.

SUMMARY AND CONCLUSIONS

A series of 431 cases of glioma of the brain have been studied in relation to injury to the head. Injury was reported to have occurred in fifty-eight cases (13.4 per cent). As a control, in an equal number of cases without tumor of the brain there was a history of injury to the head in forty-five (10.4 per cent). Two hundred normal persons were also interrogated, and seventy-one (35.5 per cent) reported injury to the head. With or without adjustment in patients with tumor for relatively greater liability to fall and be injured, the incidence of injury in this group is not sufficiently high, as compared to the other series, to suggest an etiologic factor. The relative incidence of injury in cases of glioma of the brain must therefore be abandoned as an argument in favor of injury being a cause of glioma. Considering the relatively high incidence of injuries to the head in the general population, there is ample possibility that the occurrence of the injury and the tumor in the same case may be mere coincidence.

Certain criteria are suggested to apply to a given case of glioma of the brain before the reported injury can even be assumed as a cause, especially in medicolegal cases. The fifty-eight cases in which there was a claim of injury to the head subsequent to death or operation were found, in the light of these criteria, to shrink to twenty-one, wherein, for the purpose of argument, injury might be assumed as cause. This represents only 4.2 per cent of the total series of gliomas of the brain. Therefore, in 95.8 per cent of the cases, injury had not played a part in the formation of tumor and accordingly cannot be a significant factor in the general causation of glioma. Further, in the cases considered here, both gross and microscopic examination of tissues failed to show any association between the tumor and an old injury.

Since the Great War, at least 2,858 cases of injury to the head, civil and military, have been reported in current literature. The patients have been observed for periods of from two months to twelve years. In none of the 2,858 cases was there a record of glioma of the brain developing as a direct result of these injuries. Therefore, glioma of the brain as a sequela of injury to the head must be excessively rare and comes within the possibility of coincidence. The cause of glioma of the brain is still unknown, and as yet it is unwise to affirm that injury has any direct causal association, for the preponderance of evidence is against this conclusion.

ABSTRACT OF DISCUSSION

DR. CHARLES H. FRAZIER, Philadelphia: It doesn't matter for this discussion to what theory of the etiology of tumors we may incline—whether the theory of Billroth, Hansemann or others. As the authors have said, however, there are certain definite criteria. It must be presumed that the brain has been damaged, and seriously damaged, I should say. The second criterion which one must presume is that the tumor develops at the particular point where the injury was inflicted; and the third criterion is the question of time, and that, it seems to me, must always be more or less a matter of speculation. The question of the relationship of tumors to trauma is coming up in connection with the veterans of the war. We are now seeing gliomas in veterans of the Great War who sustained serious cerebral injuries. These veterans now claim compensation on the grounds of this relationship between tumor and injury. The statistics as to the incidence of this relationship vary widely. I have a note here to the effect that E. Müller stated that in 70 per cent of gliomas of the frontal lobe trauma was reported as an etiologic factor. Gerhardt noted trauma as a factor in ten out of sixty brain tumors, and of his own cases

trauma was regarded as a factor in four out of eleven. Adler estimated trauma to be a predisposing cause in 8 per cent of all cases. As a matter of record it is known that there is a closer relationship between tumors of the skull and the scalp than the brain. Since in the majority of cases in which trauma is supposed to be a predisposing factor the tumor has developed in the frontal lobe, I reviewed eighty-seven cases of frontal lobe lesions that have passed through the Neurosurgical Clinic of the University Hospital. I found a history of trauma in 15 per cent; in the majority of instances the tumors were gliomas. When I came to analyze the history of each case in this 15 per cent I was unable to find a single instance in which I believed trauma was of any significance whatever.

DR. W. B. CADWALADER, Philadelphia: I am glad to hear that Dr. Parker first said that we do not know the reason why gliomatous tumors develop in the brain. I think that is the fundamental question that must be thought about. The conception ordinarily accepted is that gliomatous tumors develop from embryonal types of cells which have remained in the brain after birth. Necessarily those cells must multiply, proliferate, and then they go on and produce gliomatous tumors. There is nothing known of now that explains why these abnormal groups of cells may multiply in the brain. There are probably many factors. I do not think it is possible to say that trauma is one of them but most probably it is not. But no absolute evidence, as proved by biologic or histologic study, exists that trauma can possibly cause proliferation of these cells, and I think it is fair to conclude that at the present time it is an impossibility for trauma alone to do it. I think the accuracy of histories in these cases is of the utmost importance, and it is well known how inaccurate patients' statements are as to the nature and the character of an injury. That is one of the difficulties in reviewing histories and drawing conclusions from histories that one has not made oneself. The latent period of tumors, of course, is variable, according to the character of the growth, but I am impressed with the fact that one occasionally sees a case in which the symptoms of tumor do develop rapidly after an injury, and sometimes, in my opinion, they have been erroneously attributed to that injury.

DR. JAMES W. KERNOHAN, Rochester, Minn.: In reply to Dr. Frazier's question: In those cases in which operation was done it was impossible to prove definitely whether any traces of injury remained, but careful examination was always made without finding signs of old injury. This work was possible only because the tumors were verified at necropsy or at operation. They were classified histologically and the probable length of time they had existed was then deducted. The question of whether injury produces one type or several types of tumor can, I think, be answered adequately by the table:

Classification of Tumors

	General Series	History of Trauma
Astrocytomas	40	8
Astroblastomas	45	3
Polar spongioblastomas	20	4
Spongioblastoma multiforme	88	17
Medulloblastomas	53	10
Oligodendrogliomas	21	3
Ependymomas	23	9
Ganglioneuromas	5	..
Unclassified gliomas	10	..
Hemangioendotheliomas	15	2
Total	320	56 (×5.7)

An effort was made to find at least one case of glioma originating from a focus of previous injury and endeavor to trace it from its origin to its final development. It is important to state that we did not satisfy this requirement.

DR. MARK A. GLASER, Los Angeles: Is there any relation to metastatic tumors and injury by glioma, as discussed here?

DR. HARRY L. PARKER, Rochester, Minn.: I agree with Dr. Frazier that statistics can be most abominably misleading; on the other hand, statistics have been used here to counteract the influence of isolated cases in which the patient has a tumor and there is a history of injury and then the case is written up as if this represented conclusive evidence for all time and for all cases. We purposely kept to gliomatous tumors because of some work already done on meningiomas and I did not want to run against this particular work. Among the fifty-eight cases the site of the tumor was unknown in ten, and in nine it was directly under the area of injury. In fifteen cases it was reasonably close; in twenty-four it was remote. The reason we did not discuss the site was that the proponents for the theory of injury can twist the question of site around to suit themselves, by invoking the idea of contrecoup or the diffuse spread of injury, and by various other factors. For instance, if a patient is injured in the frontal area the development of a tumor in the cerebellum is described by the indirect transmission of injury. So that site, in my opinion, is of no importance one way or the other. In answer to Dr. Glaser, the study was confined to gliomas. Metastatic tumors were not studied.

Clinical Notes, Suggestions and New Instruments

POSTOPERATIVE SUPPRESSION OF URINE RELIEVED BY THE INTRAVENOUS INJECTION OF HYPERTONIC SALT SOLUTION

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Vomiting may lead to such a loss of chloride from the body that grave anuria will result. The following case in a child illustrates a favorable outcome in spite of prolonged anuria:

M. E., a boy, aged 5 years, weighing 55 pounds (25 Kg.), entered the Cape Cod Hospital, Feb. 24, 1931, with appendicitis. His family history was negative. Birth and development had been normal. One year before admission he had had, during the night, an attack of pain in the lower part of the abdomen with nausea and vomiting, which subsided during the next day.

The present illness began with pain in the abdomen during the evening of February 23. He vomited repeatedly and when seen at 11 o'clock no muscle spasm or tenderness was found in the abdomen. Twelve hours later, however, pain and vomiting having continued, he was examined and definite tenderness with muscle spasm was found over McBurney's point. He was transferred to the hospital about midnight and his white blood count was found to be 17,000. The urine was free from sugar and albumin but contained acetone. Operation was immediately performed under ether anesthesia. The appendix was long, kinked and attached to the cecum at two points by adhesions. There was a small but definitely abnormal amount of clear fluid in the abdomen. The appendix was injected acutely but was not gangrenous or perforated. A small fecalith was present in the tip. He did well until midnight of February 27. At this time he wakened, complaining of pain in the abdomen, and repeatedly vomited greenish colored fluid without fecal odor.

A specimen of urine voided four hours later was yellow, cloudy and acid, had a specific gravity of 1.008, and showed a slight trace of albumin, a very slight trace of sugar, and acetone ++++. From this time he voided no urine and none was obtainable by catheter. He continued to vomit nearly everything taken during the next four days in spite of the injection of 1,650 cc. of physiologic solution of sodium chloride under the skin in four doses and of 4,680 cc. of tap water by rectum. He also received 250 cc. of a 7.5 per cent solution of dextrose subcutaneously.

March 3, at 3:30 p. m. the pulse rate was 102, respiration 24, and temperature 99.4 F. The skin was dry and pale, and he appeared slightly edematous. However, pitting edema could not be found. The tongue was coated, but the anterior half of the tongue was distinctly moist. He had passed a normal appearing stool without an enema earlier in the day. Roentgenograms of the abdomen showed no abnormal shadows. The nonprotein nitrogen of the blood proved to be 162 mg. per hundred cubic centimeters. The blood plasma chloride was 248 mg. per hundred cubic centimeters.

March 4, at 1 a. m., 60 cc. of a 10 per cent solution of sodium chloride was injected intravenously. At 5 a. m. he voided 120 cc. of urine, the first urine obtained in ninety-seven hours. He complained of thirst and hunger and during the next twelve hours partook freely. By 7 p. m. the urinary output had been 3,000 cc. He made an uneventful recovery and left the hos-

pital, March 16. At this time the urine contained no albumin, casts or acetone.

Apparently, the suppression of urine was due to a reduction in the plasma chloride to a level where urinary secretion ceased, brought on by vomiting with marked loss of chloride. It is remarkable that the vomiting began only four hours before the last urine was voided and seems, therefore, hardly sufficient to bring about such an extraordinary derangement in the blood chemistry. The fact that he had vomited before the operation and that the urine contained acetone in considerable amounts then may have indicated that he was very susceptible to such a derangement in the chemical constituents of his blood.

Before the analysis of the blood, although we felt sure that chloride was needed, the amount was in doubt because he had already received injections of salt solution under the skin providing 15 Gm. of salt. We calculated the salt deficit in his blood from his theoretical blood volume and the difference between the observed plasma chloride and the normal value of 550 mg., obtaining a result of 9 Gm. Apparently, the salt already injected must either have been retained in the tissues or else vomiting had removed the chloride as fast as it had been injected. We decided to give two thirds of the theoretical amount, and this proved sufficient.

CONCLUSIONS

1. A serious depletion of blood chloride may result from vomiting and acidosis in spite of the administration of considerable amounts of salt solution subcutaneously.

2. Such treatment may be insufficient and should be checked by means of determinations of the chloride of the blood plasma.

3. Postoperative anuria with grave nitrogen retention due to vomiting, ninety-seven hours in duration was relieved immediately by the intravenous injection of 60 cc. of a 10 per cent salt solution.

81 Bay State Road.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

EVEREADY SOLARIUM TYPE CARBON ARC LAMP ACCEPTABLE

The Eveready Solarium Type Carbon Arc Lamp is manufactured by the National Carbon Company, Inc., Cleveland, Ohio. It is designed to administer therapeutic light treatment simultaneously to groups of patients.

Description.—The lamp is designed to be attached to the ceiling. The length of the unit is approximately 3 feet and the width and depth depend on the number of units included in each lamp. One, two or four units can be housed in a complete solarium lamp. Each unit is designed to accommodate two pairs of carbons. The arc burns between only one pair of carbons at a time. As these burn, the arc shifts to the other pair without interrupting. Eveready carbons will operate the generator for ten hours without attention. Eveready Therapeutic Carbons are suggested by the company. Panels of ultraviolet transmitting glass enclose each lamp. This glass filters out the short wavelength radiations which do not appear in natural sunlight. When short wave ultraviolet radiation is required, the panels can be easily removed to permit operation with bare arc behind wire screens or quartz panels. When the panels are in place, contact with the live elements of the circuit is impossible. There is a ventilating duct on each lamp which leads to a common outlet exhaust system.

The standard therapeutic solarium unit is built for operation on 220 volt, 60 cycle alternating current, at 60 amperes arc current. The arc potential is approximately 50 volts in all cases. Each arc requires an input of 3,100 watts at 20.5 amperes line current. The unit can be designed for voltages and frequencies other than standard or for direct current when conditions require.

The minimum ceiling height to which the unit can be adapted is 2 feet above the elevation desired for the center line of the arc. Thus, to place the arc 8 feet from the floor requires a minimum ceiling height of 10 feet. The lamp units are housed in an octagonal, chromium plated reflector arranged in a manner to effect almost uniform distribution of light around the unit. Complete instructions for wiring and installation, including the necessary wiring diagrams and installation drawings, are supplied by the manufacturer.

Operating Instructions.—The arc is turned on and off by means of a snap switch, which opens and closes the main circuit breakers through relays. A complete list of operating instructions is furnished with each lamp. The dosage recommendations are not given, because definite information is not available.

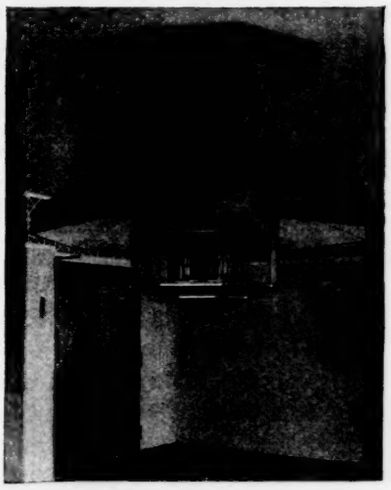

Fig. 1.—Eveready Solarium Type Carbon Arc Lamp.

Physical Claims.—The National Carbon Company, Inc., claims that the Solarium Type Carbon Arc Lamp provides a source of therapeutic artificial sunlight for group irradiation. Using therapeutic carbons, the units produce radiations made up of infra-red, visible and ultraviolet, but the ultraviolet content is much richer than that of natural sunlight. Measured by erythema production, the action of the simple lamp unit, operating at 60 amperes with glass filter panels removed, would be equivalent to average clinical sunlight over an area 16 feet square, or about 250 square feet. The motor-driven mechanism functions, it is claimed, so as to maintain a constant consumption of energy at the arc.

Therapeutic Claims.—The National Carbon Company, Inc., claims that the Eveready Solarium Type Carbon Arc Lamp will provide sufficient ultraviolet, visible and infra-red energy to supply the demands of a physician using artificial light therapy. It claims that rickets and a few diseases of calcium metabolism may be benefited by means of radiation from the lamp equipped with therapeutic carbons.

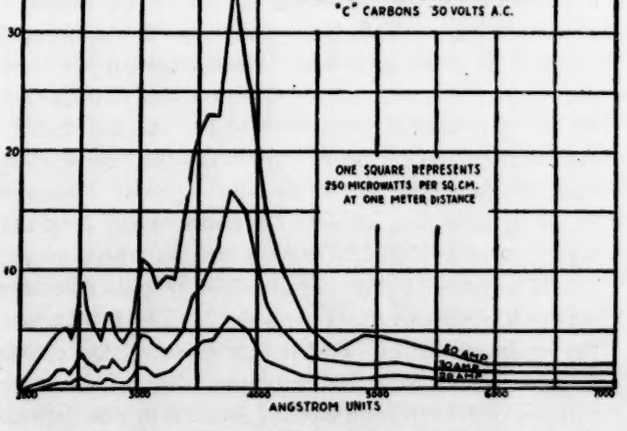

Fig. 2.—Spectral energy distribution curve for therapeutic carbons: Ordinates are so chosen that each square represents 250 microwatts per square centimeter at a distance of 1 meter; the abscissa represents wavelength in angstrom units.

The eyes should be protected at all times to avoid conjunctivitis.

The Council on Physical Therapy declares the Eveready Solarium Type Carbon Arc Lamp acceptable for inclusion in its list of accepted devices for physical therapy for a period of one year.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 22, 1931

COPPER AND IRON IN IMMUNITY

The inorganic metals have apparently received little attention in immunology. Recent investigations by Locke and Main [1] would indicate that copper and iron are extremely important in toxin production. Iron is known as the chief catalyst of cellular respiration in aerobic animals. Copper seems to replace iron as the chief catalyst in the less aerobic animals and in anaerobic bacteria. Locke and Main have shown that the bacteria which withdraw the most copper from the medium in which they are grown are essentially anaerobic and highly pathogenic. Many toxins are reported to lose their toxicity in the presence of oxygen. Neill [2] inactivated the hemotoxins of the pneumococcus, streptococcus and Welch bacillus by oxidation and was able to reactivate them by reduction. Locke and Main were led to consider the relation of copper and iron to toxin production. They found that the production of diphtheria toxin in proteose broth could be inhibited by diminishing the available copper or increasing the available iron. This was done by the addition of cysteine or other substances which bind copper so that the copper/iron ratio of the medium was changed from the normal value of from 10:1 to 20:1 to less than 1:1. Addition of the cupric ion following the action of cysteine produced the normal amount of toxin. When iron or manganese was added to cysteine, toxin production was further inhibited. They found that the toxicity of sterile filtrates of diphtheria and of tetanus neurotoxin was partially neutralized by cysteine. The hemotoxin of the tetanus bacillus was not inactivated by cysteine. It was found that the hemolytic titer of the sterile filtrates of *Clostridium welchii* hemotoxin was depressed by the addition of the cupric ion, while the lysin was restored when the copper was removed by means of cysteine. The authors conclude from their experiments that the "neurotoxins appear to be dispersions of bacterial protoplasm containing deeply embedded fragments of a positively charged respiratory substance having copper as the predominant catalyst," while "hemotoxins appear to contain fragments of negatively charged respiratory substance having ferrous iron as the predominant catalyst."

Wells [3] states that toxins may be considered as made up of a protein with a toxic radical attached. Locke and Main suggest that the bacterial toxins may owe their poisonous character to the copper carrying respiratory substance. This substance, although adapted to the respiratory process in bacterial cells, may act as a poison in the more highly organized tissues. The attention is frequently called to the similarity of toxins to enzymes. Locke and Main believe that there is a decided resemblance of the hemotoxins and the neurotoxins they studied to several respiratory enzymes.

The other toxins should be similarly studied to see whether like results are obtainable. This work immediately suggests a possible therapeutic application. Perhaps the ratio of copper to iron in the blood could be changed in the presence of bacteria giving off toxins. If the copper ion could be increased in the blood in the presence of the hemotoxins of the pneumococcus and streptococcus, toxin production might be inhibited. At least these investigations seem to carry us a step closer to understanding the composition of toxins.

1. Locke, Arthur; and Main, E. R.: J. Infect. Dis. **46**: 393 (May) 1930; **48**: 419 (May) 1931.
2. Neill, J. M.: J. Exper. Med. **44**: 199, 215, 227 (Aug.) 1926. Neill, J. M., and Mallory, T. B.: Ibid. **44**: 241 (Aug.) 1926.
3. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company, 1926, pp. 115, 116.
4. Priestley, J. T.; Markowitz, J., and Mann, F. C.: Am. J. Physiol. **96**: 696, 1931.

DETOXICATING ACTION OF THE LIVER

The liver is the keystone of our vegetative existence both because of its strategic anatomic location and because of its manifold functions. The mass of blood from the extensive splanchnic area contains the collected absorbed materials from the small intestine and the greater part of the large intestine. This passes through the portal vein to the liver. There is no alternative route under ordinary circumstances. If the hepatic tissue cells are capable of exerting an influence on the materials newly absorbed from the intestine, they have the first opportunity. It has been shown that the liver is the only tissue capable of transforming non-sugar precursors into dextrose. It is the locus of deamination of amino-acids and the most important tissue in the formation of urea. The final oxidations of ingested purines to uric acid in man and to allantoin in lower animals takes place in the liver. This organ is a gland in its own right, for here are synthesized the bile acids. Not only can it form bile pigments but from the blood it removes those manufactured elsewhere in the body and excretes them in the bile. Furthermore, the liver has traditionally been known as the detoxicating organ *par excellence*.

The detoxicating function of the liver has recently been subjected to critical reinvestigation by Priestley, Markowitz and Mann.[4] Strychnine was employed as the toxic substance and its concentration in blood and

tissues was assayed by testing the deproteinized, concentrated water extract of the material on frogs under strictly uniform conditions. The investigators made a comparison between normal dogs and others with an Eck fistula but the results were inconclusive. The method of contrasting the effect of injection into a systemic vessel with injection into the portal likewise was indefinite, while the scheme of following destruction of the toxic material by liver pulp was unsatisfactory. In another series of experiments, perfusion of isolated organs with hirudinized blood was carried out. The blood was kept in circulation and was aerated by a heart-lung preparation. When there was no organ or tissue in the circuit, added strychnine was not removed from the perfusion fluid. When muscle was perfused there was a slow removal of strychnine from the blood and a gradual accumulation in the muscle. On the contrary, when the blood containing strychnine was passed through the liver there was not only a rapid removal of the drug from the blood by the hepatic tissue but the concentration of strychnine in the liver itself also diminished with considerable rapidity. Assuming that the perfused organ does not behave as efficiently as the organ in vivo, this experiment indicates that the liver ordinarily possesses marked efficiency in detoxicating certain poisons.

The susceptibility of normal and dehepatized animals to strychnine was then examined. The dose of the drug required to produce beginning convulsions was determined for the animals; the liver was removed and after recovery from the operative effects the same dose was again given. It was found that the animals from which the liver had been removed were far more susceptible to strychnine, half of the previous dose now being sufficient to cause convulsions. The distinctly increased reaction of the dehepatized animals in a series of carefully controlled experiments of this sort leads to the conclusion that the liver plays an important part in detoxication in the body. Additional studies in which the blood, muscle and liver tissue in the living animal were examined periodically for strychnine after the drug had been injected showed that the liver rapidly withdraws the toxic material from the blood and destroys it, while the muscle tissue takes up a small amount and retains it. In the dehepatized animal the concentration of strychnine did not fall profoundly in the blood, whereas the content in the muscle increased markedly but was not destroyed.

In the studies here discussed the investigators have availed themselves of the most advanced technics in experimental surgery and physiology and have affirmed the older contentions of the detoxicating action of the liver. The detailed mechanism of this phenomenon awaits further study but especially, as is the case with most advance in the sciences, awaits the development of suitable methods for obtaining the materials involved and for their analyses.

THE THREATENING MANIFESTATIONS OF PERNICIOUS ANEMIA

The contribution represented by the brilliant discovery of the effect of liver therapy on the management of pernicious anemia should not be allowed to obscure some of the unsolved mysteries of the disease. It is, of course, extremely gratifying to know that before the advent of the liver dietary the outlook in pernicious anemia was grave and recovery was rare, whereas today the prognosis is much better. Liver and its extracts have been used for only a few years. It becomes imperative, therefore, not to allow the early enthusiasms to awaken unwarranted hopes in every instance, and particularly desirable to continue intensive studies on the problems of the disorder. Pernicious anemia has been defined [1] as a grave progressive disease interrupted by remissions "occurring without any discoverable cause whatever." It is characterized by certain changes in the blood and blood-forming organs, the central nervous system, and the gastro-intestinal tract.

Liver therapy has been concerned primarily with hematologic features. The familiar achlorhydria is apparently not altered thereby; and of late the ever-threatening menace of the sclerosis in the posterior and lateral columns of the spinal cord and the neurologic symptoms has loomed up larger. Carey [2] has stated that, before the advent of liver in the treatment for pernicious anemia, patients died in any of several ways. They became the victims of some intercurrent infectious accident, just as any patient might. They died slowly or rapidly of a progressive anemia which none of the then known therapeutic procedures could check. They died as the result of the progress of the lesions of the cord to the condition which can be classed as "tabetic"; i. e., with paralysis of the extremities, rectum and bladder and with trophic disturbances. Carey utters the warning that liver therapy apparently has no effect on the ultimate outcome in every case of pernicious anemia.

It is too soon to begin to be hopeful that liver substances can indefinitely check the progress of the disease. In considering the result of liver therapy with the idea of deducing an etiologic hypothesis, it must not be forgotten that achylia and sclerosis of the spinal cord are integral parts of the syndrome and that these changes are apparently unaffected by liver. In certain cases, Carey continues, it is evident that one must expect death as the result of the progression of disease of the spinal cord, in spite of a relatively good condition of the blood. In other cases, the blood-forming organs become incapable of further regenerative effort, perhaps as a result of the age of the patient, or even conceivably in younger patients because of exhaustive overstimulation. Finally, there are patients with an aplastic marrow who cannot become stimulated initially. As Carey says, in

1. McCann, W. S., and Maitland-Jones, A. G., in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1930.
2. Carey, J. B.: Pernicious Anemia with Fatal Termination During a Liver Diet, Arch. Int. Med. 47: 893 (June) 1931.

order to deduce from any method of therapy an etiologic hypothesis, one should not be too dogmatic until some effect is demonstrated on the whole clinical picture rather than on a single phase of the condition.

Current Comment

THE HISTIOCYTE IN MEDICINE

In its warfare against microbiotic invaders, the body possesses a considerable variety of defense mechanisms. They have been referred to as existing in the form of structure, secretions, chemical substances and cellular activity. Many cells in the organism have phagocytic powers. Some of them abound in the blood, where they early engaged the pioneer attentions of Metchnikoff. He differentiated phagocytes into microphages and macrophages. The microphages include particularly the neutrophilic leukocytes and the eosinophilic leukocytes, the important phagocytes of the circulating blood. The macrophages include the other cells mentioned, the most important being the endothelial cells. It is perfectly true, Karsner and Ecker [1] have pointed out, that the endothelial cell circulates in the blood, but apparently its most important activity is in the tissues and body spaces. Of late, more has been said about some of the little known macrophages under the designation of histiocytes, literally "tissue cells." The word histiocyte, which is the generic name for the cells of the reticulo-endothelial system, has many synonyms.[2] Unusual types of what were designated as desquamated endothelial cells have repeatedly been asserted to occur in normal blood, though the existence of such cells is not generally recognized. Cells from four to six times as large as erythrocytes and containing phagocytosed material were first described as occurring in peripheral blood, in 1874, by Eichhorst.[3] Dameshek [2] has recently insisted that the histiocytes deserve more serious consideration. He refers to the reticulo-endothelial system as a presumptive secondary line of defense against bacteria, the first line of defense being the polymorphonuclear cells. Dameshek asserts that the histiocyte has distinctive histologic and functional characteristics that make its presence in the peripheral blood stream easily recognized. In disorders that involve the reticulo-endothelial system, the histiocytes may appear in the peripheral blood usually coincident with an increase in monocytes. This is analogous to reactions of the bone marrow in which myelocytes appear in the peripheral blood coincident with an increase in polymorphonuclear cells. According to Dameshek, histiocytes in the peripheral blood are found especially when monocytosis is present. Thus they were seen in monocytic (histiocytic) leukemia, in agranulocytosis, especially in the phase of recovery, in septicemia, in subacute bacterial endocarditis, in the convalescent stage of rheumatic fever and rheumatic endocarditis, rarely in tuberculosis and other infections, frequently in dementia paralytica and occasionally in miscellaneous conditions, especially in the leukemias and lymphoblastomas. Other authors have described their occurrence in typhoid, cholera, malaria, kala-azar and other diseases. These macrophages are probably concerned with immunity. It seems timely to learn more about their origin and clinical significance.

1. Karsner, H. T., and Ecker, E. E.: The Principles of Immunology, Philadelphia, J. B. Lippincott Company, 1921.
2. References to the abundant literature are given by Dameshek, William: The Appearance of Histiocytes in the Peripheral Blood, Arch. Int. Med. **47**: 968 (June) 1931.
3. Eichhorst, H. L.: Ein merkwürdiger Fund im Blute eines Typhuskranken, Deutsches Arch. f. klin. Med. **14**: 223, 1874.

DISPOSAL OF CITY WASTES

The disposal of city wastes has come to be an engineering rather than a health problem. Even the expense of garbage disposal is no longer saddled on the health department budget. Various attempts are still being made to recover the more valuable ingredients of ashes, refuse, garbage and even sewage. In a recent series of articles, Butterfield [1] maintains that these wastes can be disposed of most economically by using them as fuel for the production of steam. This applies particularly to refuse and garbage, since in this country municipal ashes are used chiefly as fill, and sewage sludge is not universally available. It is estimated that the fuel value of rubbish is about $5,000,000 a year. Although this is an extremely small proportion of the country's yearly fuel bill, it is too large a sum to neglect. The main difficulty involved is that rubbish requires specially constructed furnaces. Garbage represents a somewhat different problem. Hog feeding as a means of disposal is not always to be recommended. Recovery of grease together with the production of a fertilizer base has not proved to be practical in many instances. Incineration appears to be the most logical method. The average quantity of this material collected each day is about $\frac{8}{10}$ pound per person, with a nutritive content of about $\frac{15}{100}$ pound. Using these figures, Butterfield is convinced that steam can be produced profitaby by incineration in urban communities. There is no doubt that the disposal of all types of wastes has been a financial burden to both small and large communities. If the engineering difficulties can be surmounted and financial considerations adjusted so that such disposal can at least pay for itself, city taxpayers will be quite satisfied.

1. Butterfield, E. E.: City Wastes: Whence They Come and What to Do With Them, Southern City, April, May and June, 1931.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 a. m. on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

August 24. Improving the Complexion.
August 29. Why We Should Protect Children Against Tuberculosis.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., Chicago daylight saving time.

The program for the week is as follows:

August 24. Boots and Saddles.
August 26. Is Your Stomach Upset?
August 27. Care of the Teeth of the Expectant Mother.
August 29. Eye Defects in Children.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Dr. Hieronymus Appointed Oakland Health Officer.—Dr. Arthur Hieronymus, Alameda, has been appointed health officer of Oakland, effective August 17. Dr. Hieronymus was until recently health officer of Alameda County, which position he had held for twenty years.

Society News.—Dr. Douglas D. Toffelmier, San Francisco, addressed the Alameda County Medical Association, August 17, on "Treatment of Fractures of the Carpal Bones," and Dr. Harry J. Smith, Oakland, "Anesthesia as a Medical Specialty." A motion picture on spinal anesthesia was shown.

Hospital Installs 300,000 Volt X-Ray Machine.—The University of California Hospital recently installed what is said to be one of the most powerful, high voltage x-ray machines designed exclusively for medical purposes. The new machine, which is now available for therapeutic work, generates 300,000 volts.

COLORADO

Licenses Revoked.—The state board of medical examiners, July 7, revoked the licenses of Dr. Kalmen C. Sapero, Denver, for having published objectionable advertisements in newspapers and of Dr. Hall H. Thomas, Denver, for having an unlicensed practitioner associated with him in the practice of medicine.

DISTRICT OF COLUMBIA

Society News.—The District of Columbia Medical Society received $6,000 by the will of the late Dr. George M. Kober, the income to be used for needy or infirm physicians.

Nuisances in Washington.—One hundred and eighty-seven nuisances were reported during the week ended August 8, according to the Health Department of the District of Columbia; 269 nuisances were reported abated. As a result of the inspection work of the department, among the condemnations listed were 230 bushels of apples, 248 crates of cantaloups, and 68 crates of eggplants.

KENTUCKY

Society News.—Drs. Thomas R. Barry and Richard G. Waterhouse, both of Knoxville, Tenn., addressed the Harlan County Medical Society, Harlan, July 25, on "Prostatectomy by Means of Electrical Surgery" and "Diagnosis and Treatment of Hyperthyroidism," respectively.——Speakers at the meeting of the Christian County Medical Society, Pembroke, July 21, were Drs. William C. Dixon, Nashville, Tenn., on "Treatment of Fibroid Tumors of the Uterus"; Maurice L. Hughes, Clarksville, Tenn.; "Rectal Conditions," and Frank M. Stites, Hopkinsville, "The Chronic Colon."

MARYLAND

Outbreak of Typhoid in Washington County.—A special clinic has been opened in Hagerstown where any one wishing to be immunized against typhoid may be inoculated in an effort to combat an outbreak of the disease in Washington County. When this report was received, August 10, there were said to be about twenty cases in the county. A polluted well at Maugansville, several miles from Hagerstown, is the suspected source of the outbreak, it is reported. Only two of the cases were in Hagerstown at the time of this report, and they were said not to be connected with the outbreak at Maugansville. As several of the cases are on farms that produce milk for the two dairy routes in Hagerstown, the board of health has ordered that all milk coming into the city be pasteurized.

Dr. Williams Appointed to Newly Created Position.—Dr. Huntington Williams, secretary of the New York State Health Department, has been appointed director of health of Baltimore, a position recently created to increase the efficiency of the city department of health, it is said. The duties of the new office will include complete supervision of all activities of the health department subject to the approval of Dr. Charles Hampson Jones, who has been reappointed commissioner of health. Dr. Williams, who will go to Baltimore, October 1, has been connected with the New York State Department of Health, with headquarters in Albany, since 1922. Dr. Jones has been associated with the Baltimore health department since 1896. He was appointed commissioner in 1897 and was assistant commissioner through five administrations of various mayors. He was reappointed commissioner of health in 1919, in 1923 and again in 1927.

Model Health Unit Planned.—A model full time health department is to be established in Anne Arundel County, cooperatively maintained by the Rockefeller Foundation, the Johns Hopkins School of Hygiene and Public Health, the county commissioners of Anne Arundel County, and the state health department. The purpose of this organization will be to work out programs of preventive medicine with particular emphasis on sanitation problems. Water supply and sewage disposal for summer cottages on the bay and rivers of the county will be studied and efforts made to eliminate disease hazards now said to exist. Child welfare and tuberculosis prevention and control of communicable diseases will also be features of the department's program. Anne Arundel County was selected as the most adaptable to the proposed research work because it has a large population, and proximity to Baltimore, and its many rivers and shore lines create complicated health problems. Dr. John H. Janney, Jr., of the Rockefeller Foundation will be in charge of the department, and Dr. Clarence F. Moriarty, county health officer, will be assistant director. Mr. Fred Caspari will be sanitary engineer. Dr. Janney has been connected with the International Health Division of the Rockefeller Foundation since 1921.

MASSACHUSETTS

Arthritis Survey.—The division of adult hygiene of the Massachusetts State Department of Public Health has started a survey to determine the number of persons suffering from chronic arthritis in the state. On information already obtained it has been estimated that there are about 146,000 persons in Massachusetts afflicted with the disease and that the incapacity resulting therefrom causes a loss of $8,000,000 annually.

Society News.—The eightieth anniversary of the founding of the Plymouth District Branch of the Massachusetts Medical Society was celebrated, July 16, in Plymouth. The speakers at the meeting were, among others, Drs. Cadis Phipps, Boston, on "Pericarditis"; William E. Browne, Boston, "Restoration of the Functions of the Hand"; Arial W. George, Boston, "X-Ray Errors in Diagnosis," and Thomas H. McCarthy, Brockton, "The General Practitioner and His Present Status."

MICHIGAN

Society News.—Dr. William J. Butler, Grand Rapids, addressed the Mecosta County Medical Society, June 9, on "Office Treatment of Genito-Urinary Affections."——Dr. Samuel W. Becker, Chicago, addressed the Berrien County Medical Society, Niles, July 30, on "Some Practical Aspects of Modern Syphilology."

MINNESOTA

Northern Minnesota Medical Association.—A clinicopathologic conference will be a feature of the meeting of the Northern Minnesota Medical Association to be held at Hibbing, September 14; it will be conducted by Drs. Georges L. Berdez, Mario M. Fischer, Gage Clement and John R. McNutt, all of Duluth. The scientific program will consist of papers by Drs. Lawrence R. Gowan, Duluth, on "Multiple Sclerosis"; Olin W. Rowe, Duluth, "Pediatrics"; Donald C. Collins, Rochester, "Peptic Ulcer"; John S. Lundy, Rochester, "Modern Phases of Anesthesia"; Albert M. Snell, Rochester, "What the American Doctor Sees in Europe"; Thomas Myers, St. Paul, "Pathology of the New-Born"; William H. Hengstler, St. Paul, "Remote Effects of Head Injuries," and Naboth O. Pearce, Minneapolis, "Medical Economics." Dr. Melvin S. Henderson, Rochester, president-elect of the state medical association, will also be on the program.

MISSISSIPPI

Society News.—Three Jackson physicians provided the program of a joint meeting of the Issaquena-Sharkey-Warren Counties Medical Society and the Central Medical Society, held at Vicksburg, July 14, as follows: Drs. John W. Barksdale, "Osteomyelitis"; Lawrence W. Long, Jr., "Use of Spinal Anesthesia in Obstetrics," and Adna G. Wilde, "Incidence of Malignancy."——Dr. J. Rice Williams, Houston, spoke on bronchography before the North East Mississippi Thirteen County Medical Society at Houlka, June 16.——Dr. Edwin E. Benoist, Natchez, presented "Some Notes on Gallbladder Disease" before the Homochitto Valley Medical Society, July 9, at

Bude. — The Issaquena-Sharkey-Warren Counties Medical Society was addressed, August 11, at Vicksburg by Drs. Albert K. Barrier, Rolling Fork, and Guy P. Sanderson, Vicksburg, on diphtheria and nephrolithiasis, respectively.

NEW YORK

Hospital News. — Six new buildings have recently been completed at the U. S. Veterans' Hospital, Northport, Long Island, at a cost of $898,000. They include a building for the treatment of acutely disturbed mental patients, an infirmary, a continued treatment building, an occupational therapy building and two buildings for the staff and attendants. The capacity of the institution is thus increased by 448 beds, making a total capacity of more than 1,400.

Tri-State Treaty Commission Organized.—On authorization of the respective legislatures, the states of New York, New Jersey and Connecticut have organized a Tri-State Treaty Commission, the purpose of which is to negotiate and agree on the terms of a treaty "to cover comprehensively all matters relating to the prevention and eradication of the contamination and pollution of the natural waterways flowing or situated between the states of New York and New Jersey or the states of New York and Connecticut and of the natural waterways of said states flowing respectively to any of such separating natural waterways." The proposed treaty will be submitted to the legislature of each of these states and to the federal government for approval.

New York City

Message on Health.—The city health department recently attached a message to each bottle of milk and cream delivered to more than 1,000,000 users of bottled milk in a campaign to inform the public concerning their health needs. Literature has been prepared dealing with health subjects and these pamphlets may be had on request.

Graduate Course in Tuberculosis.—A four weeks' course of instruction in pulmonary tuberculosis will be given at the New York Post-Graduate Medical School and Hospital under the direction of Drs. James Alexander Miller and George G. Ornstein, beginning August 31. More than 400 tuberculosis beds are available for clinical study at Metropolitan and Bellevue hospitals, and about the same number at Sea View. Application should be made to the dean, Post-Graduate Medical School, 301 East Twentieth Street.

New Appointments at Rockefeller Institute.—The board of scientific directors of the Rockefeller Institute for Medical Research has announced several new appointments and promotions. The new appointments are: associate, Dr. Irvine Heinly Page; assistants, Newell M. Bigelow, Ph.D., Drs. Albert Claude, J. Theodore Geiger, Harry S. N. Greene, John L. Jacobs, Esben Kirk, Douglas A. MacFadyen, David K. Miller, Ronald S. Saddington, Francis F. Schwentker and Edward E. Terrell; Wendell M. Stanley, Ph.D., and Messrs. Stanton A. Harris and Henry W. Scherp; fellows, Peter S. Yang, Ph.D., and Messrs. James H. Jensen, C. William Lacaillade, Jr., Ralph G. Schott, Lester W. Strock and John E. Stumberg. The promotions include: associate to associate member, Oskar Seifried, D.V.M.; assistant to associate, Drs. Thomas Francis, Jr., and George P. Berry, Elmer E. Fleck, Ph.D., Raymond C. Parker, Ph.D., and Robert E. Steiger, Sc.D.

Dr. Opie to Succeed Dr. Ewing at Cornell.—Dr. Eugene L. Opie, professor of pathology at the University of Pennsylvania School of Medicine, Philadelphia, has been appointed professor of pathology at Cornell University Medical School to succeed Dr. James Ewing, who will retire in 1932 after thirty years in that position. Dr. Opie, who is also director of the laboratory of the Henry Phipps Institute for the Study, Prevention and Cure of Tuberculosis at the University of Pennsylvania, is a former president of the National Tuberculosis Association, the American Association of Pathologists and Bacteriologists and the American Society for Experimental Pathology. From 1910 to 1923 he was professor of pathology at Washington University School of Medicine, St. Louis, and dean from 1912 to 1915. Dr. Ewing plans, it is reported, to devote his entire time to the study of cancer and to his work as president of the medical board of Memorial Hospital.

Fourth Graduate Fortnight.—The New York Academy of Medicine will hold its fourth annual graduate fortnight, October 19-30, on the general subject of "Disorders of the Circulation." The program comprises specially arranged coordinated afternoon clinics to be presented in twelve hospitals of the city, and a scientific exhibit of anatomic, bacteriologic and pathologic specimens and research material bearing on the various aspects of the subjects discussed at the evening sessions. Among others, evening addresses to be given at the academy will be delivered by Drs. Warfield T. Longcope, Baltimore, on "Syphilitic Aortitis"; Alfred Stengel, Philadelphia, "Relation of Heart Disease to Operations"; Lewis A. Conner, New York, "Pericarditis — Diagnosis and Medical Treatment"; Roy Wesley Scott, Cleveland, "Arteriosclerosis"; John Homans, Boston, "Phlebitis and Diseases of the Veins"; Alfred W. Adson, Rochester, Minn., "Results of Sympathectomy in the Treatment of Thrombo-Angiitis Obliterans"; George E. Brown, Rochester, Minn., "Occlusion of Arteries"; Frank H. Lahey, Boston, "Association of Cardiac Lesions with Hyperthyroidism"; Arthur M. Fishberg, New York, "Heart Failure"; Marcus A. Rothschild, New York, "Myocarditis"; Charles Hendee Smith, New York, "Heart Disease in Childhood." The clinical aspects of coronary disease, including thrombosis, will be discussed, Wednesday evening, by Drs. Robert L. Levy, Harold E. B. Pardee and Bernard S. Oppenheimer, all of New York. Drs. John H. Wyckoff, Jr., Robert H. Halsey and Harlow Brooks, New York, will speak, Thursday evening, on "Ectopic Paroxysmal Tachycardia," "Cardiac Neuroses and Psychoneuroses," and "The Heart of an Athlete," respectively. "The Use of Drugs in Heart Disease" and "Endocarditis" will be the respective subjects of Drs. Alexander Lambert, New York, and William Sydney Thayer, Baltimore, Friday evening. The Wesley M. Carpenter Lecture will be delivered, Tuesday evening, by Sir Thomas Lewis, London, on "Intermittent Claudication." Sir Thomas will also address other sessions.

Infantile Paralysis Decreases.—The total number of cases of infantile paralysis during the week ended August 15, was 512, a decrease of 79 from the previous week. Ninety cases were reported to the health department, August 15, although only sixty-eight were recorded the day before. A report of eighty-three cases, August 11, led the board of estimate to vote an appropriation of $100,000 for the use of the department of hospitals in providing for additional nurses and equipment. This was in addition to the fund of $75,000 made available the previous week for the department of health. To instruct parents in methods of checking the spread of the disease, the health department during the week issued a special pamphlet containing information on the mode of infection, proper care of children to protect them against the disease and procedure with children who show symptoms. The pamphlet also lists waters about the city that are safe for swimming. Deaths since January 1 had reached 221 up to August 15. The rate remains between 12 and 13 per cent, less than half the rate in the 1916 epidemic.

NORTH CAROLINA

Personal.—Dr. Harold L. Amoss, professor of medicine, Duke University School of Medicine, Durham, will be visiting professor of medicine at Peiping Union Medical College, Peiping, China, for four months beginning October 1.

Three-County Health Unit.—Health activities in Forsyth, Yadkin and Stokes counties were consolidated under a single unit, August 1, with Dr. John Roy Hege, as director and headquarters at Winston-Salem. This is the first of several such consolidations planned by the state health department, to be carried out with the aid of funds from the drought relief fund distributed by the U. S. Public Health Service.

OHIO

Hospital News.—Mount Sinai Hospital will establish the Frank E. Chapman award to be given annually to the member of the hospital staff who makes the outstanding contribution of the year to medicine or other fields of hospital service, it was recently announced, in memory of the late Frank E. Chapman, director of University Hospitals of Cleveland and many years a director of Mount Sinai.

New Health Center in Cleveland.—Ten coordinated services are to be offered in a new health center dedicated in Cleveland, July 28, to function under the health and public welfare departments of the city. The center, formerly the Babies' and Children's Dispensary, now contains a tuberculosis clinic, an x-ray diagnostic clinic, infant welfare station, school health service, public health nursing service, housing and sanitation department, prevention of blindness department, supervision of boarding homes for children, babies' dispensary and maternity dispensary. Located in a congested district, it will serve about 100,000 persons, the health authorities have estimated. Western Reserve University will cooperate in all the services of the center, it was said.

Physical Defects and Mental Retardation.—In a survey of the special schools of Cleveland made during the past school year by Dr. Oliver P. Kimball, it was found that 9 per cent

of the 3,132 mentally defective children in these schools suffered from congenital hypothyroidism. In 15 per cent the mental deficiency was ascribed to early malnutrition and in 3.5 per cent to congenital syphilis. Hypopituitarism was diagnosed in 2.25 per cent and brain injury, including acute infections, in 2.5 per cent. In 26 per cent there was a definite history of hereditary feeblemindedness and in almost half, or 48 per cent, the investigator could not find a physical cause for the mental status but found that more than one member of the family was affected. Thus, 74 per cent of the children in the special schools could be said to be there because of hereditary feeblemindedness. A few cases each were found of epilepsy, hydrocephalus, microcephalus and hyperthyroidism.

District Meeting to Consider Heart Disease.—Numerous aspects of heart disease will be discussed at a meeting of physicians of the fifth district of the Ohio State Medical Association at Cleveland, September 18. On the morning program will be Drs. Russell L. Haden, Cleveland, discussing the relation of focal infection to heart disease, and Norman C. Wetzel, Cleveland, heart disease in childhood. Bradley Patten, Ph.D., will present a photomicrographic motion picture of living embryos, showing the first heart beat and the beginning of the circulation of the blood. The afternoon program includes five Cleveland physicians, Drs. Harry Goldblatt, speaking on heart disease due to rheumatism; Harry V. Paryzek, cardiac decompensation; Harold Feil, diagnosis of angina pectoris; Carl J. Wiggers, physiologic and physical aspects of arteriosclerosis and hypertension; Roy W. Scott, effects of syphilis on the heart and aorta, and William H. Bunn, Youngstown, coronary thrombosis. An evening session will be held jointly with the Cleveland Academy of Medicine with Dr. Paul Dudley White, Boston, as the principal speaker, on "Optimism in the Treatment of Heart Disease."

PENNSYLVANIA

Personal.—Dr. Auleene Almina Marley Jamison, Gibsonia, has been appointed to the staff of the student health service of the University of Pittsburgh. She succeeds Dr. Marion Shepard, who recently resigned to accept a position in the public schools of Kenmore, N. Y. Dr. Jamison was graduated from the University of Pittsburgh Medical School in 1918.

Meningitis at Shenandoah.—Eleven cases of spinal meningitis and two deaths were reported at Shenandoah up to August 11. State health authorities ordered the swimming pool at the local high school to be closed in an effort to check the spread of the disease. It was reported that many children had contracted skin disorders after swimming in this pool.

Society News.—Drs. Harold L. Tonkin, Williamsport, and Harold L. Foss, Danville, addressed a joint meeting of the medical societies of Tioga and Potter Counties, at Wellsboro, July 14, on clinical aspects of heart disease and treatment of toxic goiter, respectively.——Dr. Ernest M. Watson, Buffalo, addressed the Bradford County Medical Society, Sayre, July 14, on "Carcinoma of the Lower Urinary Tract."——Dr. Joshua W. Davies, New York, addressed the Lehigh County Medical Society, Allentown, July 14, on "Anatomy of the Pelvis with Practical Surgical Application."——Dr. Robert M. Entwisle, Pittsburgh, addressed the Cambria County Medical Society, Cherry Tree, August 13, on "Complications of Acute Appendicitis."

Philadelphia

Personal.—Dr. Harry D. Lees, assistant director of student health at the University of Minnesota, Minneapolis, since 1924, has been appointed director of student health at the University of Pennsylvania. Dr. Lees was graduated from the University of Toronto Faculty of Medicine in 1910.——Dr. Robert G. Torrey, associate professor of medicine at the University of Pennsylvania Graduate School of Medicine, has been appointed professor of principles and practice of medicine at the Woman's Medical College of Philadelphia, succeeding the late Dr. Leonard Napoleon Boston.

Institutional Care for the Tuberculous.—An average of 1,740 persons die and 15,000 are ill of tuberculosis each year in Philadelphia, yet the city has only 1,274 beds available in public and private institutions for these patients, a survey just completed by a committee of the Philadelphia County Medical Society has revealed. Comparison with the tuberculosis facilities of other cities led the committee to recommend the provision of at least two beds for each death, nearly three times the present number. To relieve the present situation the committee urged the immediate construction of a 500 bed sanatorium and an additional institution of 150 beds for children. In connection with these institutions the committee pointed out the necessity for facilities for thoracic surgery, as surgical intervention is being increasingly used in tuberculosis. Institutional provision for Negroes was found to be an equally vital need. Finally there appeared a need for a separate building for the reception of patients suspected of having tuberculosis or those who appear to be susceptible to the infection.

TENNESSEE

Health at Nashville.—Telegraphic reports to the U. S. Department of Commerce from eighty-two cities with a total population of 36 million, for the week ended August 8, indicate that the highest mortality rate (18.1) appeared for Nashville, and the rate for the group of cities as a whole, 10.4. The mortality rate for Nashville for the corresponding period last year was 20.6, and for the group of cities, 11.1. The annual rate for eighty-two cities for the thirty-two weeks of 1931 was 12.6, as compared with 12.5 for the corresponding period of 1930. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits, or that they have a large Negro population, may tend to increase the death rate.

TEXAS

Society News.—Dr. De Witt H. Hotchkiss, Houston, read a paper on "The Proteolytic Flora of the Colon in Urticaria, Eczema and other Allergic Conditions" before the Tarrant County Medical Society, June 2. Dr. Max M. Goldberg, Mineral Wells, addressed the society, May 19, on "Estimation of the Individual from the Psychologic Viewpoint."

Reorganize State Board of Health.—A sanitarian, a pharmacist and a dentist have been added to the state board of health as the result of a recent amendment to the law governing the board. The new members are: Mr. J. M. Howe, Houston; Mr. J. M. Spoonts, Wichita Falls, and Ralph A. Erickson, D.D.S., San Antonio. The bill also provided that the board should elect a chairman from its membership; consequently, the state health officer is only an ex officio member of the board. The law formerly provided that the state board of health consist of six members, all of whom were required to be physicians with five years' residence in Texas.

VERMONT

Society News.—Dr. John H. Woodruff, Barre, recently read a paper on "Kidney Stone with Report of Three Cases" before the Washington County Medical Society. A motion picture on "Infections of the Hand" was shown.——The annual meeting of the Rutland County Medical Society, July 14, was addressed by Dr. George G. Marshall, Rutland, the retiring president, on mastoids.

WASHINGTON

Illegal Practitioners Convicted.—Mrs. E. Smith, Seattle, who testified that she was a practical nurse and a masseuse, was found guilty of practicing medicine without a license, July 9, and given a suspended sentence of sixty days in the county jail. C. O. Collman, Seattle, licensed as a sanipractor in Washington and a naturopath in Oregon, was found guilty in Portland, June 30, of practicing medicine without a license and was fined $500.

WISCONSIN

Beaumont Memorial to Be Dedicated.—Dr. Cornelius A. Harper, Madison, president of the State Medical Society of Wisconsin, will dedicate a bronze tablet to the memory of Dr. William Beaumont on the site of Fort Crawford, near Prairie du Chien, August 30 (THE JOURNAL, July 11, p. 111). Speakers at the dedication ceremonies will be Dr. William Snow Miller, Madison, on "Beaumont the Man"; Walter J. Meek, Ph.D., Madison, "Beaumont the Physiologist," and Dr. Peter L. Scanlan, "Old Prairie du Chien." The site for the monument was presented to the medical society by the Daughters of the American Revolution. The inscription on the tablet is as follows:

WILLIAM BEAUMONT, M.D.
Pioneer in Physiology
Born Lebanon, Conn. 1785
Died St. Louis, Mo. 1853

At old Fort Crawford, one and one half miles northwest of this spot, one hundred years ago, Doctor Beaumont, a surgeon in the U. S. Army, performed those experiments on Alexis St. Martin which laid the foundation for our knowledge of digestion

In honor of his pioneer work this memorial has been erected by the State Medical Society of Wisconsin
1931

Society News.—Drs. George H. Ewell and John A. Hurlbut, Madison, addressed the Medical Society of Barron, Washburn, Sawyer and Burnett Counties, June 2, on "Prostatic Diseases" and "Injection Treatment of Varicose Veins," respec-

tively.——The Brown-Kewaunee County Medical Society conducted dedication ceremonies, July 15, at the old Fort Howard hospital building, Green Bay, where Dr. William Beaumont worked for two years. The old hospital has recently been renovated for commemorative purposes. Dr. Patrick R. Minahan recounted the life of Dr. Beaumont; Dr. Otho A. Fiedler, Sheboygan, the progress of medicine since 1816, when the Fort Howard hospital was built. Dr. Cornelius A. Harper, Madison, discussed present-day problems in medicine.——Drs. Elmer L. Sevringhaus, Madison, and Stephen E. Williams, Chippewa Falls, addressed the Clark County Medical Society, Greenwood, July 29, on treatment of diabetes and diagnosis of acute surgical conditions in the abdomen, respectively.——Infantile paralysis was the subject of a discussion led by Dr. Cornelius A. Harper at the meeting of the Dane County Medical Society, Madison, August 7.

GENERAL

Society News.—The American Society of Physical Medicine was organized in Philadelphia, June 12, with Dr. John S. Coulter, Chicago, as president, and Dr. Willis S. Peck, Ann Arbor, Mich., secretary and treasurer.——The annual meeting of the American Protestant Hospital Association will be held at the King Edward Hotel, Toronto, September 24-28.

Study of Pellagra-Preventing Foods.—Nutrition specialists at the National Institute of Health, Washington, D. C., are conducting studies of antipellagric crops in the hope of finding a practical means of preventing pellagra, which has become widespread in the areas affected by the drought of 1930. The institute is at the same time attempting to concentrate or isolate the pellagra-preventive vitamin, which has hitherto been detected only by its action in preventing the disease when foods containing it are eaten by pellagrins.

Medical Service for Indians. — Medical service among American Indians will be extended and improved during 1931-1932 through an appropriation by the last Congress of $4,050,000 for construction of hospitals and other health service for the fiscal year ending June 30, 1932. Under this appropriation it is planned to build a sanatorium of 100 beds at Albuquerque, N. M., a Sioux sanatorium of the same size at Pierre, S. D., and a small hospital for the Utes in Colorado. Other appropriations have been made for a sanatorium at Winslow, Ariz., and for clinical surveys of tuberculosis, trachoma and venereal disease in cooperation with state and private agencies. The personnel of the service is to be increased by more than 200 workers, it is reported, including a director of hospitals and ten full time physicians.

Examination in Obstetrics and Gynecology.—The next written examination for applicants for a certificate from the American Board of Obstetrics and Gynecology will be held in the following cities, October 31, at 2 p. m., under the direction of the examiners and assistant examiners of the board:

New York	Boston
Chicago	Ann Arbor, Mich.
Philadelphia	Baltimore
Toronto, Canada	Atlanta, Ga.
Indianapolis	Cincinnati
Portland, Ore.	San Francisco
Rochester, Minn.	Grand Forks, N. D.
Iowa City	Denver
St. Louis	Galveston, Texas

The examination, which will consist of ten questions on obstetrics and gynecology, is for group III candidates and must be accompanied by fifty case records. Group II candidates are not required to take this examination or to provide case records. Notice of the next oral and clinical examination for all applicants will be published later. Further information may be had from the secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

Deaths from Cancer and Diabetes Increase.—Mortality rates for cancer and diabetes, as well as for heart disease and cerebral hemorrhage, show appreciable increases in the mortality report of the Metropolitan Life Insurance Company for the first six months of 1931. The rate for cancer among policyholders of this company was 83 per hundred thousand, as compared with 76.9 for the same period in 1930; for diabetes, 22.3, compared with 19.4; for heart disease, the principal cause of death, 149.5, compared with 142.7 for 1930, and for cerebral hemorrhage, 56.8, compared with 54. These rates were considerably influenced by the widespread outbreak of influenza in the first quarter of the year, as the deaths of many persons suffering from chronic diseases were hastened by attacks of influenza. The unfavorable experience of the early part of the year, however, was largely overcome during the second quarter. Two noteworthy favorable trends were observed in these statistics, one a continued drop in mortality from tuberculosis, which is considered especially encouraging in view of the influenza outbreak and the severe unemployment situation; the other, a striking decrease in the diphtheria death rate, amounting to a decline of 35 per cent within a year.

Annual Report of United Fruit Company.—The nineteenth annual report of the medical department of the United Fruit Company submitted by the late Dr. William E. Deeks, general manager, whose death occurred, July 24, shows that special investigations were made by members of the staff on the developmental work connected with the control of malaria and the improvement of the health of the laboring population. The report mentions three incipient epidemics of smallpox that occurred in the Costa Rica, Colombia and Truxillo railroad company divisions; prompt measures precluded their becoming serious. Plasmochin and quinine in combination form are still being used in the control of malaria, the report says, the former being used to devitalize the gametocytes, thus preventing mosquito infection, while the quinine takes care of the asexual cycle. When repeated blood surveys indicate that the malaria incidence has been reduced to less than 30 per cent, efforts should be centered on the identification and treatment of all individual infected cases and particularly the heavy gametocyte carriers. Experimental work is being continued on a large scale in the United Fruit Company's divisions to determine the optimal dosage of plasmochin compound and quinine required to give the most satisfactory results. The educational and sanitary program followed in Cuban divisions has resulted not only in a remarkable decrease in malaria but also in lowering the morbidity from other ailments. One hundred and twenty-one cases of typhoid and eleven cases of paratyphoid fever were treated in the company's hospitals, with twelve deaths from typhoid and two from paratyphoid. The mortality rate for lobar pneumonia was 31.09 per cent in 267 cases treated.

LATIN AMERICA

Venezuela Requires Foreign Physicians to Have Local Degrees. — The Venezuelan government is reported to have issued an order requiring foreign physicians to hold Venezuelan degrees before they may practice in that country. The order affects especially the oil fields around Maracaibo, each of which has its own field hospital and in addition a central hospital in the city. The companies have procured an extension of time in order to allow their physicians to obtain the degrees, but many of the best men cannot qualify because they do not know the language. Efforts are being made to have a special license established by which foreign physicians may practice without the Venezuelan degree provided they attend foreigners only, leaving native doctors to attend their own countrymen, according to the New York *Times*.

FOREIGN

Society News.—The second International Congress of Otorhinolaryngology will be held, September 27-30, in Madrid, under the presidency of Dr. A. C. Tapia. Further information may be obtained from the general secretary, Dr. A. Fumagallo, Argensola 16-18, Madrid, Spain.——The next conference of the International Union Against Tuberculosis will be held at The Hague, Sept. 6-9, 1932. Subjects to be discussed have been selected as follows: relationship between allergy and immunity; gold therapy, and after-care for the tuberculous.

Courses for Study of the Nervous System.—Three special courses dealing with the nervous system are announced by the Medical School, National Hospital, London. A general course consisting of thirty-two lectures and demonstrations will be given from October 5 to November 27. During the same period a series of eight lectures on the anatomy and physiology and a course of ten clinical demonstrations on methods of examination of the nervous system will be offered. Applications should be addressed to the secretary, Medical School, National Hospital, Queen Square, W. C. 1.

Committee to Make Clinical Tests of New Drugs.—A special committee to arrange for controlled clinical tests of new remedies that seem likely to have therapeutic value has been appointed by the Medical Research Council of Great Britain, in cooperation with the Association of British Chemical Manufacturers. Members of the committee, which is to be known as the "Therapeutic Trials Committee," are Prof. Thomas R. Elliott, chairman; Sir Edward Farquhar Buzzard, Dr. Henry H. Dale, Lord Dawson of Penn, Prof. Arthur W. M. Ellis, Prof. Frances R. Fraser, Sir John Parsons, Sc.D., Dr. John A. Ryle, Sir John W. Thomson Walker, Mr. Wilfred B. L. Trotter, Prof. David P. D. Wilkie, Ch.M., and Dr. Frances H. K. Green, secretary. The committee is formulating a procedure whereby it can consider applications by commercial firms for examination of new products, submitted with the available experimental evidence of their value.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 25, 1931.

Annual Meeting of the British Medical Association

The ninety-ninth annual meeting of the British Medical Association was held at Eastbourne. For the first time the president, Dr. W. G. Willoughby, was a health officer. Among the subjects he discussed were the increased duration of life and factors influencing the future:

THE INCREASED DURATION OF LIFE

The average duration of life in this country shows a considerable increase in the present century, mainly owing to decrease in infant mortality but partly to general lowering of the death rate at other ages. Official tables for England and Wales show that from 1906 to 1921 the chances of survival in infancy increased 40 per cent and that 10 per cent more of the population now reach the age of 50. The annual death rates averaged nearly 20 per thousand in the last decade of the nineteenth century; now they average only 12. Infant mortality in the same period has fallen from 167 to 60.

FACTORS INFLUENCING THE FUTURE

Owing to the reduction in the birth and death rates we have an increasingly older population, which is due mainly to the decrease in the number of young people. In 1901, 1911 and 1921 the percentages of population under the age of 15 were respectively 32.4, 30.6 and 27.7. With regard to the reduction of the birth rate, if careful, scientific and eugenic birth control were possible, a healthier type might be evolved. But what is occurring is a greater reduction of births among the better types than among the less satisfactory—a mental and physical disadvantage to the race. Recent reports show that the proportion of mental defectives has increased from 4 to 8 per thousand in twenty-five years—a fact that can be only partly explained by better ascertainment. The annual rate of increase by excess of births over deaths per thousand living, which was over 14 fifty years ago and about 12 at the end of last century, was only 5 in 1928 and 2.9 in 1929.

MEDICAL PATENTS

At the representative meeting a resolution was proposed that the association, while adhering to the traditional view that it is unethical for a physician who discovers or invents any substance, process, apparatus or principle likely to be of therapeutic value to act against the public interest by unduly restricting its use for his own personal advantage, should nevertheless recognize the propriety of utilizing arrangements made by law for the protection of such inventions or discoveries and the reward of those who have made them, provided the principles enunciated are safeguarded. The resolution was moved on the part of the council of the association because certain countries, particularly Germany and Switzerland, take a different view of the ethics of patenting. An Englishman may make a valuable discovery, which he publishes but does not patent. A foreigner may then patent it and prevent the Englishman making use of his own discovery. After a long debate the resolution was amended by omitting the clause which follows "advantage" and was carried in this form. It was pointed out that the amended resolution would not interfere with the action of any person who thought he ought to take out a patent if he felt he could do so without disadvantage to the public. It would also meet the views of those who did not desire to take out patents. The result was much influenced by a letter from an eminent research worker, Dr. Dale, F.R.S., which was published some time back in the *British Medical Journal*. He pointed out the strong tradition in Great Britain and a large part of the English-speaking world against medical workers taking out patents for financial advantage. He admitted that some research workers took the contrary view. He doubted the possibility of defining the words "undue restriction" in the resolution. He preferred that the matter should be regarded as outside the province of the association. He thought that special consideration was due to physicians who had accepted salaried appointments in research laboratories and the effectiveness of whose work depended on mutual confidence and cooperation of their fellow workers in academic institutions.

FREE CHOICE OF A PHYSICIAN UNDER THE INSURANCE ACT

The new regulation which renders it less easy for a patient to change his panel physician was discussed. Dr. Brackenbury, chairman of the council, said that they stood for the principle of free choice of a physician. If the approved societies were going back on that, and if the minister of health was countenancing this, the profession's only remedy was public opinion. The insured patient should as far as possible be treated as a private patient. If the latter was not satisfied, he could go elsewhere. Now in the supposed interest of the societies and at their instigation, the insured must wait till the end of the quarter and give a month's notice. This was a serious inroad on his rights. In the discussion, the reason why the societies and a labor minister had apparently left the championing of their members' rights to the physicians was revealed. It was pointed out that, after all, a private patient could not go to a new physician whenever he liked, as the monetary consideration would restrain him, and that the unfettered free choice of a physician did not work, for in times of depression of trade panel patients were claiming sick benefit to a large extent, and when a certificate of incapacity was refused there was always some less scrupulous physician to give it because the patient would transfer to him. One speaker stated that investigation had shown that in 99 per cent of the patients who transferred did so because their physician would not certify them falsely. However, a resolution protecting against "any interference with the liberty of the insured person to change his doctor when he so desires" was carried by a large majority.

SWEEPSTAKES IN AID OF HOSPITAL

The large sums received by sweepstakes for Irish hospitals have been mentioned in a previous letter. A resolution was moved that lotteries and sweepstakes were derogatory to the prestige and dignity of the medical and nursing staffs of the hospitals. An amendment was moved declaring that such methods were in the long run injurious to financial stability and should therefore be discountenanced. It was mentioned that a Dublin hospital received $150,000 from a recent sweepstake. The hospital authorities were pleased and asked for more. But by the next post they heard from a local authority that it saw no reason to continue its yearly grant of $7,500. The discussion was closed without a division.

Decrease in the Population of Scotland

In consequence of the falling birth rate, a decrease in the population of England and Wales is in sight. The report on the census for Scotland, taken this year, shows an actual decrease. The population is 4,842,554, consisting of 2,325,867 males and 2,516,687 females. At the census of 1921 the population was 4,882,497. Thus the 1931 population shows a decrease of 39,943 (0.8 per cent). However, there was a natural increase of population (excess of births over deaths) during the intercensal period amounting to 352,386. The decrease of population therefore implies a loss by emigration of 392,329.

Health and Efficiency in Industry

The eleventh annual report of the industrial research board shows that progress has been made in ascertaining some of the factors affecting health and efficiency in industry. The mental state of fatigue produced by hours of monotonous work in a

mechanized world diminishes output and accuracy. This can be relieved by varying the work and introducing rest pauses. In a more special sphere, spectacles have been found useful to persons of normal vision when engaged in fine work. Studies are being made dealing with the individual in relation to his occupation, which are generally described as vocational. In the detection of the "accident prone" worker, information has been obtained which should yield practical results.

Dr. John Carswell: A Pioneer of Lunacy Reform

Dr. John Carswell, who established the institutional treatment of mental disease in this country on a hospital basis without certification and who played a prominent part in the recent amendment of the lunacy laws which recognized this method, has died at the age of 75 years. He studied medicine at Glasgow, where he qualified in 1877. He became assistant to Dr. Rutherford, an alienist who was a pioneer in abolishing restraint, and so acquired his earliest ideas about a better treatment of insanity. In Glasgow he was able to establish wards in the municipal hospital for the treatment of insanity. For some years he was lecturer in psychiatry in Anderson's College, Glasgow.

PARIS

(From Our Regular Correspondent)

July 8, 1931.

Meningeal Spirochetosis

Several cases of meningeal spirochetosis, studied in France by Costa and Troisier, have been reported. To the seven observations previously known, two further cases have been added, as presented to the Société des médecins des hôpitaux de Paris, one by Professor Laignel-Lavastine and Bocquien and one by Mr. Harvier and Mlle. Wilm. The first case was free of icterus. The triple symptoms (meningeal syndrome, injection of the conjunctivae, herpes) were the basis for the tentative diagnosis, which was confirmed by biologic tests. Lumbar puncture yielded a cloudy fluid containing 400 cells per cubic millimeter, of a mixed type (lymphocytes and polymorphonuclears). The etiology was easily found. The patient had been working under ground on the construction of a subway, where his hands had been constantly in muddy water. It was thus doubtless a question of contamination through the fingers; especially as there was considerable adenitis of the epitrochlear glands. The other case (that of Mr. Harvier and Mlle. Wilm) resembled true meningeal spirochetosis, and was manifested by a marked meningeal syndrome, with contractures and bradycardia but no herpes nor conjunctival vasodilatation. The cerebrospinal fluid, which was at first opalescent and presented an abundant cellular reaction, with 95 per cent of polymorphonuclears and a large number of red corpuscles, later became clear, while the blood formula veered toward lymphocytosis. Defervescence occurred suddenly on the seventh day, the day after the first lumbar puncture; but the meningeal signs abated only gradually, not disappearing until the sixteenth day. A slight elevation of temperature was noted afterward; but the meningeal symptoms did not return. The spirochetotic nature of this acute and benign meningitis with polymorphonuclears was confirmed by the serodiagnosis. The patient was employed as dish washer in a restaurant. Spirochetosis sometimes manifests itself only by a pure meningeal syndrome without icterus, and in that case one may observe a genuine relapse, contrary to the observations in icterogenic spirochetosis, in which the renewed onset of fever is not accompanied by the return of the icterus. Thus, some curable types of meningitis, with a lymphocytic reaction, may be of spirochetotic origin. Nasolabial herpes or conjunctival injection may awaken such a suspicion; but only serodiagnosis and experimentation can prove that the suspicion is well founded.

Artificial Pneumothorax in Lung Abscess

A stirring discussion developed recently, before the Société des médecins des hôpitaux de Paris, on the subject of artificial pneumothorax in suppurations of the lungs. The subject was introduced by a communication of Dr. André Jacquelin, who expressed himself as favorable to the method. According to his observations, a favorable evolution of suppurations of the lungs is relatively rare. From the initial phase of the disease, it appears to him advisable to combat it not only with methods of general treatment, such as the use of emetine, arsphenamine and antigangrene serotherapy, but also (and particularly) local treatments calculated to modify directly the gangrenous focus. Among the forms of local treatment, in addition to bronchoscopic aspiration, Jacquelin felt justified in recalling the usefulness of artificial pneumothorax, which is sometimes overlooked. This intervention, as employed by him in eight cases, brought about a complete recovery without a relapse, which has been maintained for five years in two cases, three years in three cases, two years in two cases, and eighteen months in the last case. These remote results are, in the opinion of Jacquelin, quite worth while, especially since collapsotherapy, if instituted early, is easily accomplished, is not painful, and is devoid of danger, provided it is done prudently. The discussion that followed this communication brought to light divergent opinions. Professor Sergent declared himself frankly opposed to the method. He considers that pneumothorax in such cases is of doubtful efficacy and that it may be dangerous in view of the risks of pleural infection and of pyopneumothorax. In his opinion, when a lung abscess does not heal within one or two months there is no other resource than to resort to surgical intervention. Dr. Rist, on the contrary, shared the view of Dr. Jacquelin. He had observed rapid and definitive recoveries from pulmonary abscess as a result of artificial pneumothorax. But pneumothorax must be instituted at the start, before pleural adhesions are formed. Dr. Troisier cited a case of recovery that he brought about thus in a lung abscess that followed an infectious pneumonia. Dr. Paul-Emile Weil effected a recovery in fifteen days from a pulmonary gangrenous abscess by means of pneumothorax with a single insufflation of air. Prof. Fernand Bezançon pointed out that patients, having been subjected to a pneumothorax, present, if it fails, serious difficulties to the surgeon if an operation later becomes necessary. That fact causes him to entertain certain reservations in opposition to the method, whereas a direct surgical operation is usually successful.

National Cancer Week

Under the auspices of the minister of public health, the Office national d'hygiène sociale et la ligue française contre le cancer organized a national "cancer week," extending from June 23 to June 30, 1931. Every means of publicity was employed to bring before the public the essential ideas of preservation against cancer and modern conceptions with regard to its treatment. The purpose was that everybody should learn that the reason there are so many persons with incurable cancer is that they consult a physician too late or dally with ineffective methods. Every year 40,000 of the population of France die from cancer, or one death in six is caused by that disease. The chief theme of the propaganda was: cancer is curable at the start. It must be diagnosed in time. Cancer, if operated on in the local stage, is almost sure to heal permanently. During cancer week, articles, lectures and radio talks by Mr. Justin Godart, president of the Ligue française contre le cancer, and by Professors Forgue, Léon Bérard, Jean-Louis Faure, and others, were disseminated. At the close of this great week, Mr. Blaisot, minister of public health, addressed an appeal to the public over the microphone located in the Eiffel tower. He spoke of the creation, by the government, of anticancer centers for the detection and treatment of cancer, in all the large cities. He urged the public to watch over its health and to take prompt action by consulting a physician if disturbances of health arise. It is to be hoped that this appeal will be heeded by the public. In recent weeks, a larger group of patients has been observed in the dispensaries. It must be admitted, however, that the mortality from cancer has not yet declined appreciably.

The France-America Committee at the Curie Institute

The Comité France-Amérique has been organizing receptions in honor of the nations of the Americas. Twenty-two countries were represented. The first reception was held at the Radium City, which was erected with the aid of subscriptions in which these countries participated. The receptions were attended by diplomats, savants, industrialists, literary men and artists. Professor Regaud, director of the institute, and Madame Curie and daughter, were the host and hostesses, respectively, in the two departments of the institute: the department for the technical study of radioactivity and the cancer department. Madame Curie gave a lecture on radium and exhibited to the visitors the tube, preserved in a glass case, that contains the first particles of radium secured by her husband and herself.

Treatment of Ancylostomiasis

C. Garin, J. Rousset and B. Gauthier, three physicians of Lyons, have made new researches on the treatment of ancylostomiasis and have reached the conclusion that the drug that kills the ancylostoma parasite most rapidly and most surely is ethylene tetrachloride. These authors used ethylene tetrachloride to disinfest nearly 300 miners. The results were rigorously controlled by (1) the enumeration of the worms expelled on straining all the stools passed during the treatment and after the terminal purgation and (2) the enumeration of the ova after the treatment, on microscopic examination of the stools after enrichment, a month after the treatment. These examinations revealed that treatment with ethylene tetrachloride accomplished an 82.5 per cent disinfestation, a result far superior to that obtained with thymol. Ethylene tetrahydrochloride was given at the rate of 3 Gm. the first day, 4 Gm. the second and 5 Gm. the third. The doses of 3 + 3 + 3 were reserved for undersized patients. The carriers to be treated are compelled to rest, being either put to bed or confined to their room. The authors recommend rigorous abstinence from alcoholic beverages and the consumption of a considerable quantity of milk. Carriers presenting cardiac, hepatic or renal defects are contraindicated. Supervision is necessary during the whole duration of the treatment. A daily urinalysis is made from three to four hours after the ingestion of the drug. The capsules containing 1 Gm. are taken every morning, one at a time, at intervals of one hour. The third day, and about three hours after the ingestion of the last capsule, a purge consisting of 40 Gm. of sodium sulphate is administered.

Septicemic Cerebrospinal Meningitis

Before the Société de pédiatrie de Paris, Dr. Cohen of Brussels discussed recently, at considerable length, septicemic cerebrospinal meningitis, which he regards as distinctly different from meningitis due to meningococcus, pneumococcus and streptococcus. It is a form of meningitis that occurs in children as a complication of influenza, the causative agent of which is a bacillus similar to the Pfeiffer bacillus but nevertheless different in its morphology and in cultures. It is fatal for the rabbit and for the guinea-pig, whereas for these animals the Pfeiffer bacillus is not fatal. Nearly always one finds at first a purulent infection of the upper air passages (rhinopharyngitis, otitis, bronchopneumonia). The disease has a widely variable duration—from a few hours to two months. During the course of the disease one nearly always observes, in addition to the meningeal lesions, suppurative lesions of other serous membranes (pleura, pericardium, articulations of the limbs). Blood culture reveals the presence of the micro-organism in the circulating blood. For this reason the author terms the organism "the bacillus of septicemic meningitis." He has been able to differentiate it from the Pfeiffer bacillus by means of agglutination. His researches have been confirmed by Rivers in America, Kapsemberg in the Netherlands, and others. The evolution is fatal in 95 per cent of the cases. Cohen has endeavored to secure a specific serum. By inoculating a heated culture or one attenuated through age, the author succeeded in immunizing the rabbit toward the virus. On the other hand, animals vaccinated toward the Pfeiffer bacillus do not resist inoculation with this bacillus. The author succeeded likewise in immunizing the horse and in obtaining from the animal a serum that gave favorable results.

Deaths

Dr. Veillon, professor at the Institut Pasteur, has died. He was known for research on anaerobic micro-organisms and had discovered suitable mediums for their culture. His entire life had been spent in the laboratories of the Institut Pasteur. He thrust aside all idea of personal gain and the acquisition of honors. A few weeks ago, the Academy of Medicine awarded him the grand prize of Prince Albert of Monaco, amounting to 100,000 francs, desiring thus to compensate him for his career devoted wholly to labor and characterized by a modest outlook. He was already ill at the time, and the academy knew that he would not live to profit from the gift, but left at least an income for his widow.

From Nice news has come of the death of Dr. C. Soret, honorary professor at the university and former chief of the radiologic service of the hôpitaux du Havre. Since the discovery of x-rays by Roentgen, Soret, who was professor of physics at the Lycée du Havre, was one of the first to test their application in the diagnosis of disease. At the age of 49, in order to practice radiography, he took up the study of medicine and acquired the diploma of doctor of medicine. After suffering from radiodermatitis, which led to the amputation of one hand, he retired from active practice, after having made 40,000 radiographic plates. In 1914, without thought of danger, he resumed his post in the hospitals and was obliged, as time went on, to submit to ten surgical operations. Deprived of the use of his two arms, he retired, making his home since that time in Nice, where he died.

BERLIN

(From Our Regular Correspondent)

July 6, 1931.

Protest Against Court Decision in Dresden Exposition Case

An example of the unbearable conditions to which not only physicians but any one of the intelligent class may be subjected without rime or reason is offered by a case that recently caused a great stir. The reason for the public protest that Professor Goldscheider, ordinarius for internal medicine and the revered president of the Berliner medizinische Gesellschaft, launched was the startling decision of the chamber for commercial affairs of the Dresden Landgericht (provincial court), whereby the Dresden Hygienic Exposition and Dr. Neustätter, its distinguished director, were found guilty of illegitimate competition because they published warnings against certain much advertised therapeutic methods. In the section termed "Superstition and Health," at the Dresden International Hygienic Exposition of 1930, there was a symbolic exhibit intended to serve as a warning to the public: A man started out on a road leading through swampy ground, on which a handboard pointed the way to "the physician." The pilgrim was enticed from the beaten path by guideboards vaunting the merits of numerous therapeutic methods and could be seen now wading laboriously about, with his attention attracted first to one guideboard and then to another. On the guideboards in the foreground one could decipher many different inscriptions: oxygen treatment, superoxide therapy, radical cure for collemia, osteopathy, chiropractic, biochemistry, and many more. A placard bore the words *"System- und Methodenaberglauben,"* or the rôle of superstition in therapeutic systems and methods. The purpose of it was to demonstrate to the public that something more is needed than mere faith in some therapeutic system advertised in the lay press or in some therapeutic method announced often in flaming words and by quackish art, in the usual discreditable manner and with the broadest indications. The term "super-

stition" was meant to apply to the standpoint of the layman; the picture can be interpreted in no other way. The champions of some of the therapeutic methods thus warned against felt that their business had been unjustly damaged and brought suit against the exposition and Dr. Neustätter, charging illegitimate competition. A judgment against the accused was rendered "because they have sought to promote the cause of physicians by presenting pictures that provoke comparisons that are unjustifiable." Goldscheider showed in his protest that some of the remedies mentioned have been thoroughly tested and found useless, while the remainder in their presuppositions and their foundations are so fantastic that they deserve no serious consideration. Goldscheider criticized severely the fact that the court had been satisfied with the assurances of a number of physicians who had seen good effects following the application of some of the censured modes of treatment and had not demanded the scientific opinion of a real medicolegalist. The Dresden court had, he said, taken the stand that the suit involved a question of competitive seeking of business by two groups of business men in possession of equal rights. Of these two groups, however, the medical profession had furnished the legally prescribed proof of adequate preparation, whereas the other group acted on a purely business basis. Just because our government tolerates this group and thus takes a position at variance with all civilized nations, one should not put such a commercial undertaking on the same basis with the medical profession, for which scientific training and medical conduct based thereon are prescribed by law and dictated by the sense of duty. Goldscheider proposed the following conclusions, which were approved by the trustees and the house of delegates of the Berliner medizinische Gesellschaft: 1. The Dresden Landgericht has accorded to certain unrecognized therapeutic methods a scientific value and has given them the same justification as is given to university medicine, thus failing to give consideration to the opinions of responsible recognized medical scientists. This attitude of the court indicates, in our opinion, a lack of understanding of the spirit of scientific medicine, and in treating the character of medical advertising as of slight importance it fails to appreciate the moral level of the medical profession and thus challenges our opposition. 2. The ideal endeavors of scientific medicine in the interest of public health have been interpreted by the Dresden Landgericht in the sense of a commercial transaction. This constitutes an unendurable attack on our professional honor and tends furthermore to throttle the free critical expression of opinion with reference to what we regard as unauthorized therapeutic methods as employed by commercial would-be healers. We feel not only that we are entitled to such expression of opinion but that we are under moral obligations thus to express ourselves. 3. It is unendurable that scientifically trained physicians possessing the state's qualifying certificate for the practice of medicine should be regarded as illegitimate competitors of persons who reduce the art of healing to a mere craft, who possess no qualifying certificate and whose activities in most countries are prohibited, and, furthermore, that such trained physicians should even be found guilty of a misdemeanor by reason of having exercised their undeniable right of criticism of substandard therapeutic methods. These conclusions, which were presented with great impressiveness, were unanimously accepted and were likewise endorsed by the Aerztekammer and by the Gross-Berliner Aerztebund as representatives of the practicing physicians. Will it accomplish anything? One has learned in Germany to suppress any optimistic conceptions with regard to the combating of quackery. The judge, on whom everything depends in the last resort, bases his decision too often on formal considerations, or, which is much worse, he is not himself convinced of the imperative need of combating quackery in the interest of public welfare. That is evident from the tenor of the decision cited. There is nothing left for us to do but to continue the struggle with all the forces at our command.

The Economic Depression and Medical Congresses

In view of the serious economic depression under which not only Germany and Austria but also the German and the Austrian medical professions are suffering, the trustees and the house of delegates of the Gesellschaft für Verdauungs- und Stoffwechselkrankheiten have decided to postpone for one year the meeting that was to have been held in Vienna in September under the presidency of Professor Falta. This decision is an indication of the extremely bad conditions that exist, and it is possible that other scientific meetings that have been announced for this year will likewise be postponed.

VIENNA

(From Our Regular Correspondent)

July 15, 1931.

Second International Hospital Congress in Vienna

The second International Hospital Congress, which met in Vienna in June, brought a large number of medical men from thirty-four different countries to this city to discuss problems of management, building and administration of hospitals and the best methods of treatment of patients. Some of the most important papers may be of interest, although presented in a brief abstract. After the welcome extended to the visitors by Professor Tandler and Dr. Resch in the name of the republic and its capital, the transactions were quickly entered into.

An investigation into the costs of building hospitals, comparing the expenditure for such constructions in Germany, Great Britain and the United States, reported by Distel, C. Elcock and E. F. Stevens, respectively, shows that the bed can be used as a unit for estimating such costs. Each bed requires from 900 to 1,500 cubic feet of space; a means to bring down the expenditure of construction can be found in diminishing the average cubic space per bed. It appears that the American hospitals have a much higher cubic space per bed, and also cost much more per unit, than the European hospitals. It appears desirable that there should be available, for each twenty-five patients, one assistant physician, one head nurse, two nurses, one or two "student" nurses and one servant girl, besides night services.

A paper on the "Ratio of Nurses to Patients" was presented at the request of the executive board of the International Hospital Committee, by Cristiane Reimann. It contained (1) a brief survey of the most important inquiries of a similar kind made within the last two years, (2) statistics compiled by the subcommittee on nursing from answers to a special questionnaire sent out, and (3) a statement of the results of studies conducted in Austria and the United States. They had been started a little over ten years ago independently and almost simultaneously in Vienna and New York. The details should be read in the original paper, as they are exhaustive. The questionnaire was sent to hospitals in such distant countries as New Zealand, Rhodesia, Japan, China, Syria and Iceland.

The problem of hospital terminology was dealt with in a special report by Wirth of Germany, who advocates international cooperation on this point. He suggested the following classification: small hospitals, those containing from 50 to 200 beds; medium sized hospitals, from 200 to 600 beds; large hospitals, 600 beds and upward. Furthermore, the expressions "private" and "public" hospital, "clinic" and "polyclinic" should be internationally fixed, as well as the meaning of "centralized" and "decentralized" system in hospital construction.

Information on hospital legislation, as gathered from twelve European and American countries and from Egypt and New Zealand, was presented by Mr. Harper of Wolverhampton, England. It is interesting to learn that only Austria and New Zealand have a special hospital law making it compulsory for local authorities to build and maintain a sufficient number and variety of such institutions. The paper dealt with the following points: (1) hospital legislation and administration in general;

(2) legal rules for the administration and management of hospitals; (3) compulsory notification of finances, turnover of patients, births and deaths, communicable diseases and crimes; (4) liabilities of the hospitals; (5) patients' fees and medical fees, and (6) the fiscal privileges of the hospitals.

Auxiliary hospital activities, besides those of helping the patient to regain his health and to alleviate his bodily or mental sufferings, have been studied by Wortman of Helver, together with a small committee. They believe that the hospital should provide services for religious care, protective work, elementary and vocational education, sports and games, and social work, besides art, literature and comfort. These services have a psychotherapeutic action the effect of which must not be neglected.

An exhaustive study on the rules that serve as a basis for estimating the cost of maintenance of patients in hospitals in different European countries was presented by Lauchon and Fantet, both of Lyons, France.

The problem of diet in hospitals was discussed by Professor von Noorden of Vienna. The three traditional forms of normal dietary no longer satisfy all the requirements of a large hospital; in many cases the patient must be treated on a dietetic formula that does not fit into the old (traditional) system but requires a special diet. Hence the desire for a diet kitchen arose, which, so to speak, combined the advantages and the duties of a hospital and a restaurant. It needs always the cooperation of the physician and the dietitian. In Noorden's clinic the dietitian visits the wards with the physicians. She takes the physicians' orders but also falls in with the patients' special wishes. By this cooperation, the preparation of food, as well as the ordering of the diet, will be learned by the younger generation of medical men.

The influence of health insurance on hospital practice was studied by T. B. Layton of London. He found that the institution of national health insurance in England had no material effect on hospital practice. It seems, however, to have increased the number of patients attending the specialists' service in hospitals, and has influenced the practitioner to send his patients, suffering from acute disease, at an earlier stage of the illness. Dr. Layton thinks that in the near future some improvement will take place as regards diminishing the periods of waiting before admission to a hospital, and suggests the attachment of a clerical staff to outpatient clinics, for the benefit of quicker work and better cooperation between specialists and general practitioners.

Interesting propositions were offered by E. H. L. Corwin of New York concerning the management of dispensaries. He advises that intensive cooperation be instituted between large hospitals and dispensaries. He strongly insists on adequate payment of the medical men working there for the benefit of the masses, and for a first class equipment of such institutions, which ought to be distributed near the centers where the working population resides. These papers, sketched briefly, were the nucleus for the development of an interesting discussion, which lasted four days and produced many instructive ideas.

An exhibition of appliances, apparatus, industrial products, sanitation and construction novelties, including many pictures and diagrams, was opened simultaneously under the name "Hospital Exhibition." Besides, the members of the congress were shown round all the hospitals in Vienna. A hospital tour was arranged to visit the most important hospitals in England, Denmark, Germany and Hungary before and after the congress.

Important Changes at Vienna University

The new semester of the Vienna University will see some of the older problems, which have troubled students and the family alike, solved. Thus, the successor to Professor Wenckebach, who was director of the first clinic for internal diseases, was appointed in the person of Professor Tagie, well known for his researches on blood and on metabolism. He has already taken over the clinic, and although he is a man who has not traveled much, the choice is believed to be wise. Also the surgical clinic of Hochenegg, which had been vacant for more than a year, has found a new chief in Professor Denk, a pupil of Eiselsberg, a surgeon of excellent reputation and a scientific worker. At present nearly all leading posts of surgeons, even in minor hospitals, are occupied by former assistants and pupils of the Eiselsberg clinic. Such was the dominating influence of his marked personality; his "school" may almost be said to monopolize surgery in this country. A few weeks ago, Eiselsberg himself said farewell to his clinic after having passed the seventy-first year of his age, and the last lecture that he gave was celebrated with special ceremonies.

BUDAPEST

(From Our Regular Correspondent)

July 25, 1931.

Compulsory Examination of Grammar School Boys for Venereal Disease

At a recent meeting of the Debretzin Medical Society, Prof. Dr. Edward Neuber expressed the opinion that the control of registered prostitutes is not enough; that the possibilities of venereal infection should be sought in the family life of the less cultured strata of society, as existing laws permit this. Many manifest and latent cases of congenital syphilis evade medical examinations. Such are chiefly the syphilitic diseases of children. Such children are brought to the clinics by their parents only rarely, because in most instances they cannot afford to pay for transportation and they commit their syphilitic children to the care of quacks. Such hidden syphilitic cases could be found only by examining children, when admitted to grammar school. The most simple procedure to check the possibility of infecting children with syphilis would be to start control at the marriage registry offices, where certificates of freedom from venereal diseases ought to be demanded from the contracting parties.

As a beginning, Professor Neuber introduced in Debretzin the compulsory periodic medical examination of grammar school children. It is intended to make records of all children suffering from venereal diseases. If these measures prove effective, he will take steps to introduce the system into the whole country. In the general antisyphilitic campaign, this method is quite unknown.

The Death Rate from Tuberculosis

Prof. Alexander Korányi has taken up the question whether the energetic campaign against tuberculosis has been actually a factor in the great decrease in the death rate from tuberculosis. Korányi prepared two graphs, one of which compares the tuberculosis death rate of Denmark with that of England, and the other illustrates conditions in Hungary. By thoroughly studying the question Korányi has reached the conclusion that the campaign as organized against tuberculosis in these countries is closely related to the decreased mortality. During the war and directly after it the tuberculosis death rate increased, while in the following years, particularly in 1925 and 1926, it began to decrease. In Budapest, the death rate due to tuberculosis amounts to 25 or at most to 30 per 10,000 of population. The perpendicular fall experienced in the latter years is a world phenomenon. The next task, according to Korányi, is a regional campaign. In almost all countries there are certain regions which are more extensively infected with tuberculosis than others. These areas and foci have to be searched out and dispensaries erected in an ever increasing number. In Hungary there are at present seventy-one dispensaries, but this number had to be increased. It is interesting that in Hungary thirty or forty years ago the most highly infected area was the great lowland, about a third of Hungary's territory; here tuberculosis claimed its sacrifices by thousands. The most highly infected part of the country at present is the district near the Matra and Mecsek mountains.

ITALY

(From Our Regular Correspondent)

June 15, 1931.

Congress of Anatomy

The Società italiana di anatomia will hold its third congress at Palermo, in October. The topics on the program are: (1) morphogenesis of derivatives from the intestine, with an official paper by Professor Bruni, of the University of Parma, and (2) new data on the histochemistry, morphology and histophysiology of cellular lipoids, with an official paper by Professor Ciaccio of Messina. Professor Luna, of the University of Palermo, will be secretary of the congress.

Society for Promotion of Study of Tuberculosis

The Rome chapter of the Società italiana di studi scientifici sulla tuberculosi met recently under the chairmanship of Professor Morelli.

CHANGES IN CARDIOVASCULAR FUNCTION IN DISPLACEMENT OF MEDIASTINUM

Dr. Monaldi discussed the cardiovascular functioning of twenty-six patients, subjected to therapeutic pneumothorax, who presented displacement of the mediastinum. He examined the arterial pressure; the power of circulatory adaptation to various exigencies of the organism, tested by means of static and dynamic experiments: the cardiorespiratory frequency relation; the behavior of the sphygmogram, the cardiogram and the jugular phlebogram. As a result of numerous observations, in fifteen of the twenty-six patients he discovered various functional anomalies with reference to the capacity of circulatory adaptations, arterial pressure and behavior of the venous pulse. These anomalies may, in time, become lessened and may finally disappear. The author holds that the changes encountered are due chiefly to disturbances in the regulation of the endotracheal circulatory currents and, in a few rare cases, to the freedom of action of the myocardium.

Several persons took part in the general discussion. Professor Morelli said that in such cases the dyspnea is due to mediastinal shifting and hence is in the nature of true asphyxia and is not of cardiac origin. He called attention to the lack of cardiac disturbances in the majority of the pneumothorax cases that were successful and technically well conducted.

Cerutti pointed out that in displacements of the mediastinum due to left pneumothorax the distribution of the gas with relation to the heart is important, since in some cases the gas itself collects in the mediastinal cavity surrounding the apex of the heart, which gives rise to the radiologic sign of the so-called dance of the heart.

Signorelli recognized the importance of displacements of the mediastinum and stated that it is necessary to distinguish the displacements due to attraction from those due to repulsion—displacements toward the left from those toward the right—because the symptoms are different, and likewise the behavior is different from the prognostic and the therapeutic points of view. As a rule, the most prominent symptoms are produced by the displacements by repulsion from the right to the left and by the displacements by attraction toward the right.

Dr. Motta spoke on the deviation of the protruded tongue and the contralateral displacement of the larynx, calling attention to the associated deviations of the tongue and the larynx. These are explained by the fact that the two organs are connected with the hyoid bone, and hence in them are reflected the causes that determine a dysequilibrium of that bone. The causes may have their seat in the upper part of the hyoid (tumefactions, cicatrices and muscular paralysis) or distally (changes in the statics of the laryngotracheal tube).

Luzzatto-Fegiz discussed the communication of Motta and brought out that the inclinations and rotation of the larynx are frequent in patients with chronic pleuropulmonary tuberculosis. They follow a well determined rule, according to which peculiar changes in the equilibrium of the larynx correspond to the two principal types of tracheal deviation. In the first type (inclination) is encountered the rotation of the tongue, whereas to the second type (S-shaped or bayonet-like deformations, characteristic of cirrhotic lesions of the superior lobes) corresponds an inclination of the larynx on its horizontal plane.

Activities of Public Health Service

Dr. Fornaciari, the head of the public health service, has published an account of the activities of the service during the year 1929. The report mentions an epidemic of influenza with its peak in the first quarter; an increase in scarlet fever, diphtheria, cerebrospinal meningitis with formation of a number of epidemic foci, and persistent recrudescence of epidemic malaria, which set in in 1928. The general mortality showed a slight increase, rising to 16.1 as compared with 15.6 of the previous year. There was a single case of smallpox among a total of six suspects. There was a slight improvement in the course of typhoid infections, which presented the maximum in Lombardy (with a mortality of 18.4 per 10,000 of population), whereas the lowest incidence was recorded in southern Italy, with a mortality of 9.4 per 10,000, although the department of Basilicata showed only 3.1 per 10,000. The highest incidence was in the province of Teramo, with a total of 880 cases, with 48 deaths in 13 communes. The outbreak was traced to drinking water. Among the prophylactic provisions adopted may be mentioned those pertaining to diphtheria (vaccination with the Ramon anatoxin), cerebrospinal meningitis (immunization of healthy persons and of those exposed to the contagion), and typhoid (application of more strict hygienic measures, hospitalization of patients, vaccination, chlorination of the drinking water).

In the antituberculosis services, the campaign was carried on with the aid of the provincial societies. The total number of persons receiving aid, which in 1927 had been 6,068 and 14,832 in 1928, was increased to 19,327. In this campaign aid was given by the Italian Red Cross society, which expended, during 1929, in addition to the governmental aid, about 9,000,000 lire ($472,500). In the campaign against malignant tumors, from which more than 22,000 persons die annually in Italy, the contribution of the public health service consisted chiefly in aiding the activities of the sanitary centers and in the supplying of radium. Preventive measures were adopted also in the field of malaria and in the prophylaxis of venereal diseases; gonorrhea and primary syphilitic infections showed a slight increase. Vigilance in the prosecution of abortionists led to the preferment of charges against 577 physicians and midwives. Action was taken also against seventy-three physicians for failing to report abortions. In fifty-five seizures of narcotic drugs, about 11 Kg. was confiscated. Special aid was given various communes for the carrying out of hygienic work, 19,000,000 lire, or about a million dollars, having been expended for that purpose. Copies of the regulations pertaining to the production and care of milk were sent out, which had good results.

Meeting of the Trieste Medical Society

Before a recent meeting of the Trieste Medical Society, which convened under the chairmanship of Professor Oblasti, Dr. Tagliaferro presented a paper on "Spinal Anesthesia in the Practice of Gynecology." He pointed out the difference in results obtained by various workers. Owing to the laws governing the diffusion of the anesthetizing fluid in the subarachnoid space, an erroneous technic may give rise to untoward incidents, the most frequent of which are vomiting, respiratory and cardiac paralysis, paralysis of the nerves, and toxic meningitis. Fatal outcomes are observed with greater frequency than in ether or chloroform anesthesia. More recent statistics, which consider not only the immediate but also the late mortality, give to inhalation anesthesia less favorable results. The speaker reports the results obtained in his 150 personal cases of spinal anesthesia. He employs procaine hydrochloride

almost exclusively. He excludes from the treatment patients with grave internal hemorrhages and those subject to shock, in order to prevent the hypotensive action of spinal anesthesia. When possible he excludes also patients subject to headache. Formerly he used, in the preparation of patients, a form of scopolamine, but that was given up because of untoward incidents (restlessness, pallor, prostration), and he now uses exclusively morphine and atropine. An intramuscular injection of caffeine combined with strychnine is allowed to precede spinal anesthesia. He reports failures in 9.9 per cent of the cases, anesthesia of short duration in 3.3 per cent, and good results in all the other patients.

Better Control of Transportation of Tuberculous Patients

The ministry of the interior has sent to the prefects of the Italian provinces a letter outlining the precautions to be taken in controlling the movements of tuberculous patients in treatment centers. The development of hospital aid for this class of patients, observes the ministry, has produced constantly increasing shifting of patients from their habitual treatment center to the institutes for the treatment of the tuberculous. In order to control this movement it is necessary that the management of the Consorzio provinciale antitubercolare from which the patient is being transferred shall make sure that he is able to endure the journey, lest it happen that he arrives at the institute in a grave condition, so that, as has occurred in a few instances, his death ensues within a few days. The management should assure itself in advance that a bed is available, so that the patient may be admitted immediately on arrival and not be compelled to put up at a boarding house, or in welfare institutions that are not equipped for the admission of tuberculous patients. In the case of every transfer of a patient, the Consorzio antitubercolare should communicate promptly the fact and the attending circumstances to the prefecture of the province in which the institute for treatment is located.

Every prefecture in which institutes (public or private) for treatment of the tuberculous are located must keep an exact list of the available beds.

It has happened that patients with pulmonary tuberculosis have stopped over in places termed "centers for rest and treatment" but which are not provided with the equipment found in genuine treatment centers. The patients, under such circumstances, are admitted to ordinary lodging and boarding houses. To prevent such grave disadvantages, more systematic surveillance should be established, from the sanitary point of view, over the movements of strangers. The surveillance should be entrusted to the sanitary officer of the commune.

Finally, there are localities, although not called centers for rest and treatment, in which, owing to their favorable climatic conditions, half of the population is tuberculous. In such communities, all lodging and boarding houses that admit the tuberculous should be inspected by the health officer in order that he may assure himself that the hygienic conditions are satisfactory. The health officer should exercise constant vigilance to prevent healthy persons from becoming infected through the sojourn of tuberculous patients. The prophylactic hygienic measures to be adopted in such circumstances should not, however, be of a character to vex tuberculous patients but must be applied with discretion.

Prohibition of Use of the Term "Clinic"

By a recent decree, the health commissioner of the city and province of Naples prohibits private treatment centers (institutes so called) and private ambulatoriums from using the terms "clinic," "polyclinic" and "clinical institute." The use of these designations will be reserved to the university clinics devoted to official instruction. The establishment of private institutes in the streets contiguous to the university or hospital ambulatoriums, medicosurgical treatment centers and obstetric clinical institutes is likewise prohibited.

Marriages

FRANCIS HARRY CLARKE SCHURMAN, Springville, N. Y., to Miss Charlotte Elizabeth Cleveland of Somerville, N. J., June 22.

CHARLES FRANCIS ADAMS HALL, Newburyport, Mass., to Miss Mary Elizabeth Chitty of Lexington, N. C., June 18.

RAYMOND ELMORE EARP, Selma, N. C., to Miss Gretchen V. Schonmaker in Sewickley Heights, Pa., June 15.

WALTER COLFAX LOVEJOY, Maywood, Ill., to Miss Alma Salena Sheets of Greenfield, Ind., May 30.

CUTHBERT ENNIS POWELL, Swainsboro, Ga., to Miss Mary Elizabeth Chestnut of Ty Ty, June 15.

FLORIAN FRANK ZBORALSKI, Manitowoc, Wis., to Miss Mary Bolger of Minocqua, August 1.

ALLEN A. GLEITZ, East Springfield, Pa., to Miss Winifred Hudkins of Connellsville, June 8.

DEAN HENRY JEFFERS, Lake Geneva, Wis., to Mrs. Genevieve Masters of Fox Lake, May 13.

CHARLES K. SCHLOSS, Osborn, Ohio, to Miss Dolores Bishop of Dayton, May 23.

Deaths

Harold Walgrove Wright ✠ Ojai, Calif.; Columbia University College of Physicians and Surgeons, New York, 1905; member of the American Psychiatric Association and the New England Society of Psychiatry; president of the Ventura County Medical Society; aged 48; died, July 12, in the Buena Vista Hospital, Ventura, of coronary occlusion and myocarditis.

Walter Crispin Lippincott, Seattle; University of Pennsylvania School of Medicine, Philadelphia, 1903; member of the Washington State Medical Association; formerly secretary of the King County Medical Society; medical director of the Seattle General Hospital; aged 56; died, June 25, in Los Angeles, of heart disease.

James Arthur Dow, Cambridge, Mass.; University of Vermont College of Medicine, Burlington, 1867; member of the Massachusetts Medical Society; formerly bank president; member of the school committee; on the staff of the Cambridge Hospital; aged 86; died, May 27, of hypostatic pneumonia and arteriosclerosis.

Jesse Bedford Shelmire ✠ Dallas, Texas; University of Louisiana Medical Department, New Orleans, 1883; emeritus professor of dermatology and syphilology, Baylor University School of Medicine; member of the American College of Surgeons and the American Dermatological Association; aged 73; died in July.

Alfred Thomas Hobbs, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1890; Western University Faculty of Medicine, 1890; member of the American Psychiatric Association; formerly on the staff of the Homewood Sanitarium, Guelph; aged 66; died, May 23, in the Johns Hopkins Hospital, Baltimore.

Lester Roscoe Davis, Newark, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1907; member of the Medical Society of New Jersey; served during the World War; on the staffs of the Presbyterian, Irvington General and St. James hospitals; aged 48; died, July 13, of angina pectoris.

John Franklin Merrill, Northwood Narrows, N. H.; University of Vermont College of Medicine, Burlington, 1886; member of the New Hampshire Medical Society; aged 73; on the staff of the Margaret Pillsbury General Hospital, Concord, where he died, in July, while visiting patients.

Thomas G. Bates, Lubbock, Texas; Louisville (Ky.) Medical College, 1888; member of the State Medical Association of Texas; past president and secretary of the Lubbock County Medical Society; aged 65; died, May 9, in the Lubbock Sanitarium, of cerebral hemorrhage.

George M. Moore, Eldon, Mo.; University of Louisville (Ky.) School of Medicine, 1892; member of the Missouri State Medical Association; past president of the Camden County Medical Society; aged 69; died, June 28, of cerebral hemorrhage and carcinoma of the stomach.

William Nelson Moore ✠ Appleton, Wis.; Northwestern University Medical School, Chicago, 1909; member of the

Illinois State Medical Society; served during the World War; on the staff of St. Elizabeth's Hospital; aged 48; died, July 18, of carcinoma of the rectum.

George William Miller, Columbus, Ohio; Starling Medical College, Columbus, 1906; member of the Ohio State Medical Association; served during the World War; aged 48; on the staff of the Mount Carmel Hospital, where he died, July 18, of heart disease.

James Cephas Smith, Browns, Ala.; Medical Department of the University of Alabama, Mobile, 1905; member of the Medical Association of the State of Alabama; aged 48; died, May 26, in the King Memorial Hospital, Selma, of hypertensive heart disease.

Walter Everard Paul ✠ Boston; Harvard University Medical School, Boston, 1887; member of the New England Society of Psychiatry; on the staff of the Massachusetts General Hospital; aged 69; died, July 24, in the Peter Bent Brigham Hospital.

Charles F. Russell, Herndon, Va.; University of Maryland School of Medicine, Baltimore, 1867; member of the Medical Society of Virginia; past president of the Fairfax County Medical Society; Civil War veteran; aged 92; died, July 16, of senility.

Jacob L. Walker ✠ Union, Mo.; Barnes Medical College, St. Louis, 1899; past president of the Franklin County Medical Society; aged 52; died, March 16, in the Missouri Baptist Hospital, St. Louis, of cerebral hemorrhage and arteriosclerosis.

Clarence E. Anderson, Elmira, N. Y.; University of Buffalo School of Medicine, 1919; member of the Medical Society of the State of New York; aged 39; died suddenly, July 18, in the Arnot-Ogden Memorial Hospital, of coronary thrombosis.

Silas Charles Delap, Kansas City, Mo.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1880; Eclectic Medical University, Kansas City, 1903; aged 85; died, June 18, of carcinoma of the bladder and uremia.

Jarvis Sherman Wright ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1895; member of the American College of Surgeons; associate surgeon to the Long Island College Hospital; aged 56; died, June 30, of heart disease.

William Charles Hassler ✠ San Francisco; Cooper Medical College, San Francisco, 1892; president elect of the American Public Health Association; city health officer; aged 63; died suddenly, August 3, of heart disease.

Thomas Warburton Jones, Camden, Ala.; Medical Department of Columbia College, New York, 1890; member of the Medical Association of the State of Alabama; aged 62; died, July 17, of cerebral thrombosis.

Joseph Edgar Rowan ✠ Wichita, Kan.; Chicago College of Medicine and Surgery, 1914; served during the World War; aged 42; died, July 20, in the Cleveland (Ohio) Clinic Hospital of bilateral polycystic kidneys.

John Franklin Reed, Concord, N. C.; Medical Department of the University of the City of New York, 1893; member of the Medical Society of the State of North Carolina; aged 63; died, July 6, of heart disease.

James Woodville Marshall, Shawnee, Okla.; Barnes Medical College, St. Louis, 1898; member of the Oklahoma State Medical Association; aged 65; died, April 27, of hypertension and cerebral hemorrhage.

Samuel Winfield Scott Dinsmore, Pittsburgh; Hahnemann Medical College of Philadelphia, 1876; aged 80; died, July 1, in the Homeopathic Hospital, of chronic myocarditis and acute dilatation of the heart.

Joseph B. Delozier, Sevierville, Tenn.; Medical Department, University of Tennessee, Nashville, 1886; member of the Tennessee State Medical Association; aged 70; died, July 2, of cerebral hemorrhage.

Frank Blankenhorn, Orrville, Ohio; Western Reserve University School of Medicine, Cleveland, 1919; aged 41; died, July 17, in the Massillon (Ohio) City Hospital, of uremia and chronic nephritis.

William Clark, Cleveland; Medical Department of Western Reserve University, Cleveland, 1892; aged 61; died suddenly, July 17, at his home in East Cleveland, of coronary sclerosis and endocarditis.

James William Bush, New Britain, Conn.; Kansas City College of Medicine and Surgery, Kansas City, 1920; aged 55; died, July 21, in the Bridgeport (Conn.) Hospital, of cerebral hemorrhage.

Pedro Joaquin Dona, Coloma, Mich.; University of Illinois College of Medicine, Chicago, 1922; aged 37; died, July 1, in the State Hospital, Kalamazoo, of chronic diffuse meningoencephalitis.

John Sutherland Dickey, Newington, Ont., Canada; Queen's University Faculty of Medicine, 1903; aged 58; died, April 22, in the Cornwall General Hospital, Cornwall, of pneumonia.

Claude Abner Searcy, Bryan, Texas; University of Texas School of Medicine, Galveston, 1904; member of the State Medical Association of Texas; aged 50; died, May 3, of heart disease.

Charles W. McPherson ✠ Polo, Ill.; Rush Medical College, Chicago, 1882; Medical Department of the University of the City of New York, 1887; aged 69; died, June 20, of heart disease.

John V. Woodruff ✠ Buffalo; University of Buffalo School of Medicine, 1892; past president of the Erie County Medical Society; aged 70; died, July 17, in the Kane (Pa.) Sanatorium.

Lauritz T. Brastad, Ridgeland, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1911; aged 67; died, July 15, at the home of his son in Winter, of mitral stenosis.

Willis Stearns, Pomona, Ill.; St. Louis College of Physicians and Surgeons, 1891; aged 70; died, June 28, in the Holden Hospital, Carbondale, as the result of a cerebral hemorrhage.

Charles Vernon Beaver, Anita, Iowa; Northwestern Medical College, St. Joseph, Mo., 1885; aged 73; died, June 25, in the Clarinda (Ia.) State Hospital, of cerebral hemorrhage.

Ralph Eugene Benner ✠ Mason, Mich.; Northwestern University Medical School, Chicago, 1928; aged 32; died, July 16, of injuries received in an automobile accident.

D. Grant Taylor, Lake Dallas, Texas; Baltimore University School of Medicine, 1897; member of the State Medical Association of Texas; aged 59; died, March 17.

Henry Percival Parr Thompson, Highlands, N. C.; Medical College of the State of South Carolina, Charleston, 1890; aged 62; died, July 1, of cerebral hemorrhage.

Champlin Fletcher Buck, Lockport, N. Y.; New York Homeopathic Medical College, 1885; formerly city health officer; aged 69; died, July 22, of heart disease.

Felix B. Stone, Chicago; Hahnemann Medical College and Hospital, Chicago, 1902; aged 65; died, May 10, of coronary occlusion and arteriosclerosis.

Charles Peter Tillmont, Centerville, Iowa; College of Physicians and Surgeons, Chicago, 1901; aged 60; died, May 29, of heart disease and nephritis.

Claude Clifford Harrison ✠ Chicago; Hahnemann Medical College and Hospital, Chicago, 1921; aged 39; died, July 21, of streptococcic septicemia.

Leslie J. S. Avery, Au Sable Forks, N. Y.; University of Vermont College of Medicine, Burlington, 1887; aged 72; died, July 11, of gastric ulcer.

Forrest Leavitt, Somerville, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1890; aged 78; died, June 21, of nephritis.

Josiah J. Goff ✠ Parkersburg, W. Va.; College of Physicians and Surgeons, Baltimore, 1891; aged 63; died, May 28, of cerebral hemorrhage.

Allen G. Miller, South Bend, Ind. (licensed, Indiana, 1897); aged 95; died, July 9, in Los Angeles, of arteriosclerosis and chronic endocarditis.

Herbert H. Bown ✠ Asheville, N. C.; Columbus (Ohio) Medical College, 1892; aged 66; died, June 22, of cerebral hemorrhage.

William Shimer Apple, Philadelphia; Jefferson Medical College of Philadelphia, 1889; aged 64; died, June 29, of diabetes mellitus.

Dee Hale Andrews, St. Louis, Mich.; Cincinnati College of Medicine and Surgery, 1896; aged 56; died, July 1, of heart disease.

Louis C. Ahlborn, Marietta, Ohio; Baltimore Medical College, 1895; aged 72; died suddenly, July 19, of heart disease.

Walter Roland Register, Knoxville, Tenn.; Vanderbilt University School of Medicine, 1890; aged 65; died, June 23.

James R. Darbro, Sanders, Ky.; Louisville (Ky.) Medical College, 1879; aged 78; died, July 2, of heart disease.

Laurentius M. Nason, Shrewsbury, Mass.; Jefferson Medical College of Philadelphia, 1884; died, April 17.

Lee N. Spinks, Vienna, La.; Memphis (Tenn.) Hospital Medical College, 1893; aged 66; died, April 15.

Correspondence

"ALKALINITY OF THE BLOOD IN RELATION TO THE PROGNOSIS IN CANCER"

To the Editor:—THE JOURNAL, June 27, gave editorial notice to some work from our laboratories showing that untreated cancer patients have a relative alkalinity in their blood plasma. The inference was drawn that this alkalinity of blood plasma p_H in cancer might be associated with deficiency in hemoglobin or anemia. This is not our experience but, in order to remove the belief from the realms of judgment to that of exactitude, we have made a correlation chart between the p_H of the blood and the hemoglobin of the blood in 197 cancer patients. We find no correlation (the correlation coefficient, $r = +0.0367$) whatever, so that, as far as our experience goes, there is no relation between deficiency of hemoglobin and relative alkalinity of the blood in cancer patients.

It was also suggested that cachexia was a factor in producing alkalinity of the blood plasma in cancer patients. As a considerable number of our patients were untreated, and so early cases, cachexia was not a factor. We do not see cachexia as frequently as we used to and attribute this, at least in part, to the calcium medication of our cancer patients. Although we cannot make a correlation chart of cachexia and p_H, we may say that, in our experience, cachexia in cancer patients is not a factor in alteration of the p_H of the blood plasma toward alkalinity, but that we believe the tendency toward alkalinity to be inherent to the disease.

The p_H test, as a test, is commonly misunderstood by medical men. Chemists, and particularly industrial chemists, have a clearer idea of its effects. In chemical systems, of which the blood is one, p_H is an expression of conditions of equilibrium, or what might be called biologic equilibrium. As such it governs or is involved in rH, concentration of inorganic substances, action of enzymes, and many other phases of biologic equilibrium.

ELLICE MCDONALD, M.D., Philadelphia.
Director of Cancer Research, University of Pennsylvania Graduate School of Medicine.

EMBOLISM FOLLOWING THE INJECTION TREATMENT OF VARICOSE VEINS

To the Editor:—In THE JOURNAL, July 18, Dr. Silvermann collected and grouped the reported embolisms following injection treatment. The grouping by Dr. Silvermann of cases in which massive doses of the injected solution were given, of cases in which other operations were performed that could be made equally responsible for the embolus, and of cases of frank mercurial poisoning, which should not burden the statistics of injection treatment, is very helpful. There is one important factor, however, which, so far as the reports lend themselves to an analysis, is always present; namely, the activation of a latent phlebitis following injection treatment. It is astonishing that the history of patients developing fatal embolism is almost uniform; the injection is followed by an acute superficial phlebitis, sometimes even by a deep phlebitis with edema. The patient may have a rise in temperature. The patient is then put to bed and immobilized. Embolism follows between the tenth and the twentieth day. Obviously the activation of a "resting infection" in the varicose vein or in the deep veins is the one single important factor in bringing about embolism. The peripheral circulatory clinic at Northwestern University is now studying the possibilities of detecting such "resting infection" with simple clinical means, backed by bacteriologic studies. We also feel that putting the patient to bed with a superficial phlebitis is not necessary and there are even reports from very reliable sources that mobilization of patients with deep thrombosis does not increase the percentage of embolism. The prevention of embolism following injection treatment lies first of all in avoiding the injection of patients with latent infection, and, secondly, if a phlebitis has been produced, by ambulatory treatment of the superficial type of phlebitis.

GÉZA DE TAKÁTS, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PRURITUS IN PREGNANCY

To the Editor:—A woman, aged 36, a septipara in whom parturition occurred last August, complains of generalized pruritus. This has been present during each pregnancy, formerly confining itself to the last two months of term. The present complaint started April 24 and has continued to date. It has been more severe than in previous pregnancies; it has now become unbearable, allowing the patient no rest day or night. There are no lesions, except scratch marks, no vaginal discharge, and the pruritus is generalized. Hot baths have given relief at times but now are of no avail. The urine has been persistently acid. There is no albumin. The specific gravity ranges between 1.012 and 1.020. There was a trace of reducing substance for the first time, June 13. Treatment has consisted of massive doses of calcium lactate, sodium citrate, potassium citrate, bromides and phenobarbital, with only temporary relief. The diet has been mainly fruit, vegetables and milk, occasionally eggs and meats, for the past two months. I should appreciate any suggestions as to treatment or information concerning this case. Please omit name.

M.D., Ohio.

ANSWER.—Nothing definite is known about the pruritus of pregnancy, pruritus gestationis. One author thinks that it starts with the stretching of the skin of the abdomen, and that generalized pruritus not infrequently results from the localized form. Generalized pruritus may be due also to emotional disturbances, functional or organic nervous disease, toxic disturbances, especially diabetes and renal insufficiencies, or injestion of drugs such as the opiates. It tends to recur with each pregnancy in the later months and to subside after delivery. Cases have occurred which were so severe as to require emptying of the uterus. It is presumed of course that there will be a careful lookout for the development of toxemia. The blood sugar content should be determined, and the patient, unless conditions indicate otherwise, should be given a bland diet, one without condiments or spices, and with reduced protein. Locally, any suitable antipruritic preparation may be used. An effective preparation is made by placing in a wide mouth gallon bottle 8 ounces of liquid petrolatum, 15 drops of oil of bergamot and 15 drops of oil of lavendar. The inside of the bottle and of the cork are coated with this by rolling the bottle round until the liquid petrolatum has come in contact with the entire inner surface. Then 1 ounce of powdered tragacanth and 2 drachms of sodium benzoate are added. The mixture is shaken thoroughly and 16 ounces of water is added at a time until the quantities make up to half a gallon. After each addition of water the mixture should be shaken thoroughly. This is a smooth oily emulsion, suggested by Pusey, and is an agreeable application.

Instead of this, a good emulsion can be made by taking 5 ounces of olive oil and lime water to make a pint. This combination produces a certain amount of calcium soap, which is not irritating and which serves to emulsify the solution. To either of these liniments, antipruritic substances may be added, such as from 5 to 10 drops of camphor phenol and camphor chloral to the pint. These antipruritic applications should be used in small portions to prevent their causing dermatitis. They are to be applied as frequently as indicated by attacks of itching.

WHITE SHOE CLEANERS

To the Editor:—We have an odd case of foot trouble in a nurse who is in the habit of cleaning her white kid shoes after putting them on. Can you tell me what the constituents of some of the common white kid shoe cleaners are? Please omit name.

M.D., Chicago.

ANSWER.—White shoe dressings are likely to contain some but not all of the following ingredients: whiting, French chalk, fullers' earth, zinc oxide, ultramarine blue, lithopone, turpentine, white wax, white soap, shellac, phenol, oxalic acid, alum, borax, milk, glycerin, benzine, ammonia, ethyl alcohol, methyl alcohol (wood), tragacanth, acacia, stearic acid, carbon tetrachloride, oil

of bitter almonds and oil of citronella. The substances capable of producing chemical dermatitis in this list are turpentine, phenol, oxalic acid, stearic acid derivatives, alum, benzine, methyl alcohol and carbon tetrachloride. Prior to placing blame on any white shoe dressing, an effort should be made to rule out the causation of the dermatitis by fungi. Such parasitic skin lesions are prevalent during the summer months. It is undesirable that shoes of any sort should be worn when liquid dressings are being applied. An exception exists in the soapy deterging liquids applied in all shoe shining stands.

ARTIFICIAL RESPIRATION AFTER DROWNING

To the Editor:—Could you kindly advise me concerning the following questions: 1. During what length of time should a physician carry on artificial respiration in the case of a person whose body has been recovered from water, in an apparently dead condition? It is presumed that the person is known to have fallen into the water within the preceding twenty-four hours. 2. What evidence, if any, would govern the period of artificial resuscitation, presuming that no apparent sign of life in the heart or the respiratory organs is noticeable? 3. As a routine, during what period of time should a physician administer artificial resuscitation to a person apparently dead from electrical shock? 4. Has the association investigated, and can it approve or recommend the H-H Inhalator sold by the American Safety Appliances Company of Philadelphia? I believe it is used in conjunction with the Schäfer method of artificial respiration, as a source of oxygen (93 per cent) and carbon dioxide (7 per cent) in the inspired air. 5. During what period of time should a patient receive artificial resuscitation when the apparent death is known to be due to carbon monoxide poisoning or carbon dioxide poisoning?

G. N. BLACK, M.D., Humberstone, Ont.

ANSWER.—1. Artificial respiration should be continued until, owing to the complete disappearance of tonus in the muscles and to the consequent flaccidity of the body or to the onset of rigor mortis, the movements of artificial respiration cease to cause any movement of air in and out of the lungs of the victim. Resuscitation has been effected after several hours of artificial respiration on nonbreathing subjects.

2. At the complete disappearance of tonus, artificial respiration becomes mechanically ineffective. Life is then extinct and resuscitation impossible.

3. Essentially the same treatment, and to the same limits, should be applied to electrical shock as to drowning.

4. The H-H Inhalator was devised by Yandell Henderson and H. W. Haggard, who introduced and established the use of a mixture of carbon dioxide with oxygen for resuscitation. This treatment and the inhalator were approved by a commission of eminent medical authorities acting for the American Gas Association.

5. The answers to the first two questions apply to carbon monoxide poisoning as well and also to the (exceedingly rare) occurence of carbon dioxide poisoning.

PNEUMONOCONIOSIS OR ADDISON DISEASE

To the Editor:—Please give me some information on the following case: A man, aged 50, complains of marked weakness, anorexia and slight gastric disturbances. Up to twelve years ago he was a granite cutter. Then he contracted rheumatic fever. He was in bed for three months, after which his physician discovered a "patch" at the base of the left lung. He stopped work and since then has operated a small store. May 7, 1931, I saw him at about 2:30 a. m. with marked dyspnea. The pulse was regular and not accelerated. A hypodermic injection of morphine relieved dyspnea. Since then he has been confined to bed with marked weakness. He has coughed considerably for two weeks. The sputum is negative for tuberculosis. The patient is tall and thin. His face is deep brown, also the forearms and both thighs and one spot on the buttocks. The glandular system is normal. An area at the base of the left lung shows diminished resonance and a few crackling râles. The pulse rate ranges from 56 to 72; the blood pressure is 85 to 95 systolic and 40 diastolic. The left border of the heart is at the nipple; the heart sounds are normal, except for a soft murmur over the tip of the sternum. The teeth are false. The abdomen is normal; there is no diarrhea and no vomiting. The urine is normal. The reflexes are normal. The patient complains of dizziness and dimness of vision at times. The blood cells number 4,500,000 and the hemoglobin content is 65 per cent. Small nucleated red blood cells are present in fair amount, but there are no megaloblasts. I thought at first that he had a cardiac lesion, but digitalis does him no good. Parke, Davis and Company's Suprarenal Emplets (six each day) have had no effect. The blood pressure remains the same or is slightly lower. If it is Addison disease, I should like to know whether the new extract used at the Mayo Clinic is marketed by any firm. Please omit name.

M.D., Vermont.

ANSWER.—Analysis of this man's history and of the results of his physical examination is strongly suggestive of the diagnosis of pulmonary tuberculosis and Addison disease. Since the man was a granite worker, it is possible that the pulmonary condition is due to pneumonoconiosis. However, the description of the observations suggests a local tuberculous lesion rather than the diffuse fibrosis usually seen in pneumonoconiosis. The general symptoms of weakness of his cardiac and gastro-intestinal system with the low blood pressure and the pigmentation are exceedingly suggestive of Addison disease. So far as we know, the extract used at the Mayo Clinic is not yet on the market.

PITUITARY DEFICIENCY

To the Editor:—Is there any rational basis for giving pituitary extract to a patient who has a pituitary tumor and who is suffering from pituitary headaches? The patient is a woman, aged 38, very stout, especially about the bust and hips, who has not menstruated for fifteen years, who has had severe headaches for the past five years, and who has had some diplopia, although the eye grounds were clear two months ago. Roentgen examination shows a mass approximately 3 by 2.5 cm. and the posterior wall of the sella turcica eroded. I understand that there was an article in one of the issues of the *Journal of Endocrinology* on this a short time ago. Any information will be greatly appreciated.

M.D.

ANSWER.—The rationale of giving pituitary gland in this condition is "substitution therapy"; i. e., supplying a deficient product artificially and thereby lessening the necessity for function and with this the stimulus to hypertrophy. The patient shows the several characteristics of hypopituitarism: the obesity, amenorrhea, and the pituitary tumor with headache and diplopia probably secondary to it. In these cases the whole gland is given in doses of from 1 to 5 Gm. daily, persistence and patience being of paramount importance in the treatment (Eidelsberg, Joseph: Hypopituitarism, THE JOURNAL, Aug. 6, 1927, p. 449). Pardee advises supplementing the oral administration with hypodermic injections of extract from the posterior pituitary lobe in doses of from 0.5 to 1 cc. two or three times a week or even daily. He also advises roentgen therapy. To treat the underlying cause of the pituitary disturbance, removal of sources of possible focal infection and treatment of the associated deficiency of other glands of internal secretion, such as that of the thyroid and the gonads, is also suggested. The Council on Pharmacy and Chemistry held (THE JOURNAL, July 19, 1930, p. 201) that the use of pituitary by mouth is irrational, since the evidence of effects by such administration is inconclusive.

PRURITUS ANI

To the Editor:—Please advise me of any new remedies that might be used for the treatment of pruritus ani. This patient has suffered from this condition for three years. He has been treated by a recognized proctologist without results. Please omit name.

M.D., Michigan.

ANSWER.—There are no particularly new remedies in the treatment of pruritus ani. Each case should be given a careful study from a constitutional, proctologic or gynecologic standpoint. Local infection with *Streptococcus faecalis*, yeasts or ringworm fungi should be looked for. Local conditions, such as fissures or hemorrhoids, may be responsible. In many cases, nothing will be found except a neurotic disposition.

The treatment naturally varies and depends on the presence or absence of associated conditions. In all cases a bland, nonirritating diet, low in sugar content, should be insisted on. Hot water applications give relief, and the anal region should be cleansed with boric acid solution. Most antipruritic ointments give only temporary relief. Crude coal tar may be tried in a strength of from 2 to 10 per cent. Roentgen therapy is probably the most valuable palliative agent, particularly in the mycotic variety. Alcohol injections under general anesthesia have been recommended by some. Surgical excision of the involved skin is advised by other proctologists. Electrical ionization and ionic medication have also been reported as curative.

HAY-FEVER IN NORTH CAROLINA

To the Editor:—I have a patient who has hay-fever each year, beginning May 20 and lasting to July 1-15. This is the western part of the Piedmont section of North Carolina. Will you please advise me as to the probable plant that is the etiologic factor in this case? Please omit name.

M.D., North Carolina.

ANSWER.—The time mentioned coincides with the period of pollination of the common meadow grasses typical of which are bluegrass (June grass, *Poa pratensis*) and Timothy (*Phelum pratense*). The patient is probably also exposed to the pollens of sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*) and redtop (*Agrostis palustris*).

RELAXATION OF URETHRA AS POSTOPERATIVE COMPLICATION

To the Editor:—I have a patient, a woman, aged 50, who has persistent dribbling of urine without retention; this condition preceded and has followed an operation for appendical abscess occurring after an imperfect removal of a normal appendix some eighteen years ago. The urine formerly contained considerable mineral sediment but has been perfectly clear for the last two or three months and is normal. I have tried all the things suggested by many years of experience, including nux vomica, ergot and belladonna mixture, washing out the bladder, treating the base of the bladder and the urethra with silver solution, urinary antiseptics, high frequency current and bromide mixture, all without any relief. The patient was compelled to go back to work soon after the operation and has to stand on her feet a good many hours of the day. I would appreciate it if some one could suggest an etiologic factor that might influence the treatment. The patient has control of the bladder in voiding. Please omit name.

M.D., California.

ANSWER.—Dribbling of this type is frequently due to a relaxation of the external sphincter of the urethra. It is frequently associated with a cystocele following childbirth. If the latter condition is present it is usually relieved by an anterior colporrhaphy together with a colpoperineorrhaphy.

In the absence of a cystocele the external sphincter of the urethra should be freed somewhat so that it may be overlapped and shortened, tightening the outlet of the urethra. This may be done if there is much relaxation together with the anterior colporrhaphy.

ENDOCRINE TREATMENT IN OBESITY

To the Editor:—Recently I saw an article in THE JOURNAL regarding the report of a condition of obesity in which the lower extremities were markedly obese. The writer said that the condition was limited to the area below the crests of the ilium. In my case a white woman, aged 43, first noticed enlargement of the ankles nine years ago. This has slowly progressed upward until her thighs are now enormous in size. She is now undergoing the menopause and has had "hot flashes" for the past two years with very irregular menses. Her present weight is 227 pounds (103 Kg.), but her face and body are proportionate for a woman weighing 160 pounds (72.6 Kg.). A great pad of fat, the size of a large grapefruit, overhangs the right knee; the left knee has a large pad of fat but is much smaller than the right. No edema was felt in the tissues, but there were soft pads of fat. Physical examination gave otherwise essentially negative results. Her pulse was 75 and her blood pressure 198 systolic and 80 diastolic. One-half grain (0.03 Gm.) of phenobarbital was given before meals for extreme "nervousness." Theelin, 1 cc. (P. D. & Co.) was given subcutaneously in an endeavor to abate somewhat the symptoms of the menopause. No effort has been made to treat the obesity. Please advise as to this condition. Kindly omit name and address if this query is published.

M.D., New York.

ANSWER.—A study of obese persons reveals peculiar distributions of fat. It has, in fact, been stated by some authors that in various disturbances of the endocrine glands the abnormal fat deposits are found in localities characteristic of the underlying endocrine gland involved, as, for example, the so-called trochanteric fat of ovarian disease and the girdle fat of pituitary disease. However, not all workers feel that fat deposits are as specific as this, and it is not entirely unusual to see patients such as the one here described. In a case of obesity, such as this, the basal metabolism should be determined in order to exclude somewhat rare thyrogenic obesity. Treatment of obesity, regardless of the etiology, is a question of sufficient reduction of calories. Not much can be said about the value of endocrine therapy except, of course, with thyroid.

SYPHILIS IN PREGNANCY

To the Editor:—A husband has a two plus Wassermann reaction, mucous patches and condylomas. He had a course of treatment six years ago. His wife, who is seven months pregnant, has a negative Wassermann reaction. Should I give her treatment for syphilis? If so, what? She has one child, aged 4 years, whose Wassermann reaction was also negative, who seems to be normal.

J. A. RUETENIK, M.D., Cleveland.

ANSWER.—The first thing to be done is to examine the wife's blood to see whether it will yield a positive or a negative Wassermann reaction. If a positive Wassermann reaction is obtained, the wife should receive intensive antisyphilitic treatment for the remainder of the pregnancy. This treatment should consist chiefly of intravenous injections of arsphenamine or neoarsphenamine followed by mercury inunctions. At least one course of six intravenous injections should be given. This should be followed by mercury inunctions and later by one more course of arsphenamine.

The earlier in gestation intensive treatment against syphilis is begun, the greater the chances for a healthy living child; but thorough treatment even late in pregnancy results in the birth of a living child in the majority of instances. However, many of the latter children are syphilitic and require direct antisyphilitic treatment for a long time.

Even if the wife's Wassermann reaction is negative, treatment should be given in this case. Of course the husband should also receive antisyphilitic treatment, and intercourse is to be forbidden. The child, even though it is apparently normal, should also have a blood Wassermann test.

ACTION OF CODEINE

To the Editor:—Can you enlighten me regarding the alleged analgesic action of codeine? As a student, I was taught that this action was a very definite one though less than that of morphine. Yet I noticed that Grabfield in his recent article on the "Efficiency of Commonly Used Hypnotics" stated that "codeine, while efficient in depressing the respiratory mechanism, is not very efficient either in relieving pain or in producing sleep." Does this mean that clinicians and pharmacologists are agreed that the usefulness of codeine is limited to the control of troublesome coughing? And, in this connection, what of the common practice of combining codeine, one-fourth grain (16 mg.) or less, with acetylsalicylic acid, 5 grains (0.3 Gm.) and acetphenetidin, 2 grains (0.13 Gm.)? Are we to infer that this combination, which is so much in vogue for grip, gains nothing from the addition of the codeine which many of the older clinicians thought reinforced the analgesic action of the aniline derivatives? Please omit name.

M.D., Massachusetts.

ANSWER.—Codeine has, of course, a considerable analgesic effect. It is true that this is less than that of morphine and probably less than that of many commonly used analgetic drugs, such as amidopyrine. In its sleep-producing properties it is considerably weaker than morphine and ranks behind some of the other nonalkaloidal hypnotics. Probably on this account the use of codeine should be largely limited to the control of coughing, whereas, if coughing is not present as a symptom, one of the nonalkaloidal hypnotics or nonalkaloidal analgetics should be used for producing sleep or controlling pain.

In connection with the common practice of combining codeine with acetylsalicylic acid and acetphenetidin, it may be said that there is evidence that morphine increases the toxicity of certain coal tar derivatives, and, while there is no experimental evidence to that effect, it may be that codeine acts similarly. The question apparently refers to a made-up combination. This is based on the fact that a cough is so frequently present. It would seem better to use either acetylsalicylic acid or acetphenetidin or amidopyrine, or combinations of these drugs, without the codeine, for the purpose mentioned. The chief value of the codeine in such a prescription would lie in controlling the cough. Its action against discomfort would probably be less than that to be gained by increasing the dose of acetphenetidin in the prescription mentioned.

INDUSTRIAL HAZARD OF BEAUTY PARLOR

To the Editor:—A white woman, aged 47, married but having no children, still menstruating regularly and normal, is perfectly healthy, so far as I can determine, except that she has a nettle rash which developed several weeks ago and has resisted the usual treatment. The distribution is on the face, neck and arms and the inner surfaces of the lips and the cheeks. She owns and operates a beauty parlor in which she uses the usual lotions, powders and pastes. She comes in daily contact with "Vita tonic," a hair waving solution, manufactured by the E. Fredrick Company, New York, and another by the Duart Company, Chicago. What is the chemical composition of these solutions? Could they have cumulative action? She has used them for years. What other substances commonly used in this work could cause nettle rash? What preventive measures, except the use of a hand ointment, would protect the skin from fumes? Answer in detail, please, omitting name.

M.D., Texas.

ANSWER.—The beauty parlor worker may be exposed to so many substances prepared in a haphazard manner that ill effects are of normal expectancy. Reference to any of the several books purporting to furnish recipes for divers kinds of beauty parlor preparations will ordinarily disclose numerous toxic substances, described in formulas without precise compounding instructions and without indication of toxic properties. Perusal of these formulas will provide evidence of the use of such chemicals as cantharides, quinine, paraphenylendiamine, metaphenylendiamine, lead compounds, arsenic compounds, ammonia, divers irritating disinfectants, soda ash, potassium hydroxide, radioactive substances, formaldehyde, acetic acid, sulphur, fatty acids (which may decompose, forming irritating aldehydes), acetone, tars, isopropylalcohol, other alcohols, nettles, capsicum, phenol, cresylic acid and calcium hydroxide (lime water).

Without seeking to protect the two firms mentioned, the stand is taken that too many other substances are probably equally blamable to saddle full responsibility on any particular preparations without first-hand testing.

Protection and prevention for operator and subject alike may be expected when the entire industry is operated on a higher plane and when adequate supervision at the hands of public health authorities forestalls the use of preparations and practices conducive to harm. Much practical information may be obtained from the International Labour Office's "Encyclopedia on Occupation and Health" in an article on "Hair Dressers," found alphabetically tabulated therein. This publication is available in most city libraries.

KERATITIS IN SYPHILIS

To the Editor:—I have just seen a woman, aged 20, whom I treated three years ago for syphilitic periostitis of both tibias. Her father admitted having syphilis many years ago before the birth of the child. The Wassermann test of the father's blood was 2+, of the woman's 4+. The patient had been given a course of thirty intravenous injections (probably neoarsphenamine) once a week by another physician. After the first few injections the tenderness in the tibias entirely disappeared and the patient was free from any symptoms until two weeks ago, when she developed interstitial keratitis of one eye. She is working in a restaurant, dealing with food. She lives in a cheap boarding house and has to use the same bath tub and utensils as the other tenants. I shall greatly appreciate it if you will answer the following questions: 1. Is there any probability of a nonsyphilitic keratitis in a case of hereditary syphilis like this? She also has Hutchinson teeth and partial deafness in one ear. 2. What would you recommend as the best program of treatment in this case? 3. Is there any danger of infection for the people living in the same boarding house, and should the patient be allowed to work as a food handler? She has no skin lesion and seems to be in good health. Her hearing is normal. There is no involvement of the mucosa. Please omit name.

M.D., New York.

ANSWER.—1. A patient with congenital or acquired syphilis is, of course, not immune to other diseases, and it is possible that a unilateral interstitial keratitis might be diagnosed on some other basis than syphilis. Tuberculosis is a possibility, and intracutaneous sensitization tests with tuberculin should be done. On the other hand, it is much more likely that the eye lesion is syphilitic, since interstitial keratitis is known to occur in individuals with congenital syphilis even after large amounts of previous treatment. In the majority of instances the keratitis is or subsequently becomes bilateral in spite of continued therapy, and the patient should be warned of the possibility of involvement of the other eye.

2. Antisyphilitic treatment should be begun with a course of from eight to ten injections of an arsphenamine product, preferably old arsphenamine or silver arsphenamine instead of neoarsphenamine. With this should be combined weekly intramuscular injections of a bismuth salt and large doses of potassium iodide by mouth. At the expiration of this course of treatment, one might profitably give a short course (from four to six weeks) of mercury by inunction, provided the patient's cooperation in using inunctions is assured. After this, courses of arsphenamine alternating with courses of bismuth should be continued without rest periods for a minimum period of about two years, regardless of the effect of this treatment on the Wassermann reaction of the blood.

3. There is no danger of infection for people living in the same boarding house and the patient may be allowed to work as a food handler.

SYPHILIS

To the Editor:—I have a patient with a Kahn test 4+ and according to the history he acquired the disease about four months ago. I started treatment with an injection of 0.3 Gm. of neoarsphenamine and the patient, a man, aged 24, had a slight reaction beginning about an hour afterward. At that time he complained of shortness of breath, palpitation, a sense of weakness, and a peculiar feeling in the head and eyes. Will it be safe to go ahead with treatment? I was planning on giving ten weekly injections of 0.6 Gm. of neoarsphenamine, then about six of a bismuth compound, with repetition of the treatment. What about the use of bismarsen right from the beginning? Please omit name.

M.D., Illinois.

ANSWER.—A mild reaction coming on an hour after the injection should not contraindicate further neoarsphenamine treatment in moderate dosage. A careful examination should rule out cardiac, renal or hepatic disease. A simultaneous or alternating neoarsphenamine-bismuth course is the most universally used method of treating early syphilis at the present time. Sulpharsphenamine bismuth (bismarsen) intramuscularly may be used as a substitute when there is an intolerance to intravenous medication. It is not considered as effective in early syphilis as neoarsphenamine.

DERMATITIS VENENATA DUE TO ALKALI

To the Editor:—All last summer I treated a man with a dermatitis of the face, using various forms of treatment—including calamine lotion, tar preparations, quartz lamp and x-rays. None of these proved efficient or satisfactory. In the fall, I had him use a shaving soap instead of a shaving cream and this seemed to give relief, as the eruption soon disappeared. His face remained smooth and clear until the present, and now with warm weather here again his face is as bad as ever. The eruption is raised, papular, dark red and irritable, and is always worse about six hours after shaving. It burns and smarts so that it is an effort not to scratch and rub it. There is no weeping or crusting unless he scratches or rubs his face and abrades the skin. If shaving is dispensed with for three or four days, his face feels much better, but after he shaves again the eruption soon reappears. This man, a printer, is 35 years of age and weighs 210 pounds (95 Kg.). He is in excellent health and is very active. He has had no illnesses and no venereal diseases. Would you please give us your opinion on this case, and advise us as to treatment? Please omit name.

M.D., North Dakota.

ANSWER.—This is apparently a dermatitis venenata due to alkali. Soap should be avoided as much as possible, oatmeal water being used in place of it. One should make this up every day or two by boiling a few handfuls of oatmeal, placing it in a gauze bag, squeezing the bag in the water in which the oatmeal has been cooked and adding some of this to the lukewarm or cool wash water. It may also be used as a lotion after shaving, or a 0.5 per cent solution of salicylic acid in 50 per cent alcohol may be helpful. The patient should not shave close. He should avoid sunburn and other forms of irritation of the face. Mild, subirritating exposures to the sun should be beneficial.

ARGYRIA

To the Editor:—I have a friend who spent two months on a vacation in Arizona and was on the golf links every day, and most of the day. His face, hands and all exposed parts were as black as a Hindu's; not tanned but almost black. He attributed the color to the action of the sun and heat, although he was dark before. I am told that he had had "sinus trouble" and had been treated for it with silver nitrate. Is it possible for enough of the alkaloid to be absorbed through washings of an antrum to cause an argyria over so large an area after long continued exposure to the sun's rays? I have seen argyrosis of the eyes but never anything like what this man has.

M.D., California.

ANSWER.—Silver nitrate is not an alkaloid, but it is a well known fact that the use of silver preparations continued for a considerable period of time may cause an argyrosis. As a rule, it is the organic preparations which are most often used, but in any case great danger attends the application into the eyes or nose of silver preparations if they are continued for a long time. Some individuals apparently are able to employ them for months or years without any bad effects, but the possibility of an argyrosis must always be borne in mind and the drug not used longer than is absolutely necessary for fear of the unpleasant and irremediable effects that may ensue.

PSYCHOLOGIC TREATMENT OF SEXUAL FRIGIDITY

To the Editor:—I have in my care a small group of cases, all about alike, in which I have failed to secure improvement. The patients are young women, in the twenties, and each has had one child some time during the last three years. Before the child came, sexual experiences were normal. Since the delivery, they have experienced little sexual desire; one even has almost an uncontrollable aversion to coitus. In each case the situation is leading to family squabbles. Since the delivery each woman has seemed normal in every way except for some decrease in strength and endurance, with a slight increase in weight. I believe that the cause of the trouble is in the endocrines. Fear of pregnancy is a factor in some but not all the cases. I have used the usual tonic drugs, also thyroid and ovarian preparations, but so far without results. I would appreciate suggestions. Please use initials only.

M.D., Oregon.

ANSWER.—It is difficult to develop libido and sex gratification in married women who have never experienced these sensations and it is almost as hard to restore these experiences in women who have had them and lost them. In the latter cases, as mentioned in the query, fear of another pregnancy soon after the first is sometimes responsible for the change. Not infrequently scar tissue and small retention cysts in the vaginal wall after the repair of vaginal and perineal lacerations and episiotomies produce pain on intercourse and make the act repulsive. In most women, however, there is a large psychic factor which must be treated. This can be done only by a physician who has a sympathetic attitude toward these disturbances and one who can tactfully gain the patient's confidence sufficient to make her discuss these matters frankly. Drugs are practically always useless unless they are used to tone up the patient's general condition.

EXUDATION FROM WOUNDS

To the Editor:—A colleague says that he can take an old large osteomyelitis wound, one having several inches of granulating surface, and so treat it that in a few days there will be no pus. What is the dressing stained with? Years ago a physician showed me a whole foot from which almost all the skin had been torn. He said there was no pus in it. What stained the dressing?

M.D., West Virginia.

ANSWER.—Any granulating surface will exude or secrete a certain amount of serum and white blood cells. If red cells are present, they will stain the dressings. If there is a considerable number of white blood cells, the exudate will have the appearance of pus. A thin exudate will usually stain dressings.

Hypertonic solutions and certain antiseptic medications will reduce the amount of white blood cells, although sometimes acting by increasing the serous exudate.

A wound must be covered with epithelium before it is healed, and anything that favors epithelization is a desirable dressing, regardless of the presence of white blood cells in the exudate. It has been demonstrated that epithelium will grow rapidly over a chronic granulating wound beneath sterile adhesive tape, although there is a large amount of purulent appearing exudate beneath the adhesive.

An effort should be made, first, to sterilize a wound; and, secondly, to aid the growth of epithelium over its surface regardless of the amount of white blood cells or serum in the discharge.

VISION QUALIFICATIONS FOR OPHTHALMOLOGISTS

To the Editor:—I am contemplating taking up a postgraduate course in refraction this summer, with the purpose of specializing on the eye if I find that I like the work. In doing this work, what visual requirements are necessary? With glasses I have perfect vision, but without glasses I am slightly nearsighted and have some astigmatism. Would this be a handicap in doing refraction? Kidnly omit name.

M.D., Indiana.

ANSWER.—Small errors of refraction are no handicap in ophthalmic work except possibly in certain phases of ophthalmic surgery. A large share of the ophthalmologists wear glasses to correct refractive errors and ind no greater inconvenience than in other walks of life. The late Professor Fuchs had a moderate degree of simple myopia, and surely no one can claim that he was handicapped, ophthalmologically speaking.

EMBOLISM

To the Editor:—In the case of sudden death by emboli from venous thrombosis, as from operation on veins, surgical, by injection, or from a ruptured vein, what organ is affected, the lung, the heart or the brain? In other words, is it possible for a thrombosis to go direct to the brain? I have always thought so, but maybe I am wrong.

ANTHONY OAKS, M.D., Preston, Ont.

ANSWER.—Usually this is due to pulmonary thrombosis when floating emboli are caught and give rise to extensive thrombi; occasionally venous thrombi may lodge in the heart. Cerebral emboli usually follow pulmonary disease and result from small clots that are broken loose and pass into the arterial circulation. It is only occasionally that such a process takes place following venous thrombosis and pulmonary emboli.

PNEUMONIA AND MENINGITIS

To the Editor:—A child, aged 3 years, had pneumonia with a rather protracted history of high temperature. This was followed by spinal meningitis. The temperature was not kept down by cold packs. Could the fact that the temperature was not held in abeyance by cold applications be reason to assume that the meningitis could have been prevented? Please omit name.

M.D., North Dakota.

ANSWER.—The fact that the temperature was not reduced by cold does not in the slightest degree support the assumption that the meningitis might have been prevented.

FUNGUS DISEASES OF THE SKIN

To the Editor:—In Queries and Minor Notes, THE JOURNAL, June 6, are two items discussing the treatment of fungus disease of the skin. In view of the careful laboratory studies and excellent clinical results with thymol and related substances reported by H. B. Myers of the University of Oregon in THE JOURNAL, Nov. 26, 1927, and confirmed by Kingery and Atkinson (*Arch. Dermat. & Syph.*, April, 1928), by Kingery (*Arch. Dermat. & Syph.*, December, 1929) and by Mitchell (THE JOURNAL, Aug. 6, 1927), it is surprising that thymol was not suggested as a promising remedy. I have had frequent opportunity to demonstrate the efficacy of thymol in from 2 to 5 per cent solution in alcohol in the treatment of ringworm of the toes, of the skin and of the scalp, and consider it the most valuable drug available for superficial fungus disorders.

C. H. THIENES, M.D., PH.D., Los Angeles.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 8. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD OF OTOLARYNGOLOGY: Indianapolis, Sept. 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

ARIZONA: Phoenix, Oct. 6-7. Sec., Dr. B. M. Berger, 12 N. Central Ave., Phoenix.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, Sept. 18. Sec., Dr. Charles B. Pinkham, 420 State Office Building, Sacramento.

CONNECTICUT: *Basic Science.* New Haven, Oct. 10. Address, State Board of Healing Arts, 1895 Yale Station, New Haven.

IDAHO: Boise, Oct. 6. Commissioner, Hon. Emmitt Pfost, Boise.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 6-7. Sec., Dr. J. C. McKinley, 126 Millard Hall, Minneapolis.

MONTANA: Helena, Oct 6. Sec., Dr. S. A. Cooney, Power Block, Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations will be held at various cities throughout the country where five or more candidates are enrolled, Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 South 15th St., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 28 to Oct. 1. Chief, Mr. H. J. Hamilton, Room 315, State Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Sept. 8-9. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego Biascoechea, P. O. Box 804, San Juan.

WISCONSIN: *Basic Science.* Madison, Sept. 19. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, Oct. 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Minnesota April Report

Dr. E. J. Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, April 21-23, 1931. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Thirty-eight candidates were examined, all of whom passed. Two candidates were licensed by reciprocity and 1 by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1929)	93
Indiana University School of Medicine		(1928)	95.6, (1929) 97.1
University of Minnesota Medical School		(1930)	86.4,* 87.2,* 89.3,* 89.3,* 91.1,* 91.3,* 91.5,* 92.3,* 92.5,* 92.5,* 92.6, 93,* 93.1,* 93.6,* 94,* 95.3,* 96.2,* (1931) 86.1,* 89.2,* 89.3, 90.3,* 90.5, 91,* 93.4,* 94,* 95.2, 97
Washington University School of Medicine		(1929)	91.6
University of Cincinnati College of Medicine		(1929)	94.4
University of Pennsylvania School of Medicine		(1927) (1928)	91, 92.6, 94.6
University of Pittsburgh School of Medicine		(1929)	88.3
Baylor University College of Medicine		(1928)	91.2
University of Toronto Faculty of Medicine		(1926)	93.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Johns Hopkins University School of Medicine		(1921)	Michigan
Columbia University College of Phys. and Surgs.		(1928)	Wisconsin

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Harvard University Medical School		(1926)	N. B. M. Ex.

* These applicants have received their M.B. degrees and will receive their M.D. degrees on completion of one year's internship in a hospital.

Vermont February Examination

Dr. W. Scott Nay, secretary, Vermont State Board of Medical Registration, reports the written examination held at Burlington, Feb. 10-12, 1931. The examination covered 12 subjects and included 90 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. One candidate was licensed by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Tufts College Medical School		(1930)	90.2
Columbia University College of Phys. and Surgs.		(1928)	83.9
University of Vermont College of Medicine		(1904) 75, (1929)	83.9

College	ENDORSEMENT	Year Grad.	Endorsement of
University of the Dominican Republic Faculty of Medicine and Natural Sciences		(1910)*	Credentials

* Verification of graduation in process.

Book Notices

REPORT OF THE NATIONAL RESEARCH COUNCIL FOR THE YEAR JULY 1, 1929-JUNE 30, 1930. Established in 1916 at the request of the President of the United States under the charter of the National Academy of Sciences. Paper. Price, 15 cents. Pp. 119. Washington, D. C.: Supt. of Doc., Government Printing Office, 1931.

The National Research Council was established in 1916 by the National Academy of Sciences at the request of the President of the United States. The members of the Council, who are appointed by the president of the academy, are composed chiefly of representatives of seventy-seven national scientific and technical societies. Membership includes, in addition to professional scientific men, men of affairs and business men interested in industry and engineering who recognize the importance of "pure" science, on which applied science depends. The council is primarily devoted to the promotion and coordination of scientific research rather than to the actual conduct of research, although it has assumed responsibility for carrying on several important investigations. The council is composed of one group of seven divisions representing physics, mathematics and astronomy; engineering and industrial research; chemistry and chemical technology; geology and geography; the medical sciences; biology and agriculture; and anthropology and psychology, and of a second group of four divisions representing federal relations, foreign relations, states relations and educational relations. The council and the academy jointly occupy a beautiful marble building in Washington, which was made possible by funds from the Carnegie Corporation of New York. The building contains two important exhibits: one a permanent group showing such phenomena as the rotation of the earth and the variations in the earth's magnetic field, and the other a group that is occasionally changed, showing recent important scientific discoveries and appliances. The National Research Council, financially assisted by the Rockefeller Foundation, maintains three series of research fellowships, which provide research workers with sufficient funds to enable them to give all their time to research. Oct. 1, 1929, there were 124 American fellows working under the supervision of the various boards of the council and twenty of these were working in the medical sciences. The council during the year nearly completed one of its major undertakings, the publication of the International Critical Tables of Numerical Data, Physics, Chemistry and Technology, begun in 1922. A total of 6,580 copies of this five-volume set have been sold. Volume 6 was issued in October, 1929; the seventh and final volume, was largely in type at the time of this report. The total amount of money disbursed by the National Research Council during the fiscal year 1929-1930, exclusive of the purchase of securities for investment, was about $958,000, of which about $298,000 was disbursed for research fellowships mainly from funds allowed by the Rockefeller Foundation and the International Education Board. The council receives and disburses funds from certain independent organizations, which carry on their own investigations and also from an endowment provided for the council by the Carnegie Corporation. The division of medical sciences, of which Dr. Ludvig Hektoen of Chicago was chairman at the time of this report, has for three years been studying the occurrence of ascariasis in children in the mountains of Virginia, Kentucky and Tennessee. This work was under the direction of Dr. W. W. Cort of Johns Hopkins University and was supported by a grant from the American Child Health Association. The special problem of the Committee on Drug Addiction is the elimination of the habit forming power from certain alkaloidal narcotics in common use. The Bureau of Social Hygiene provided funds to support this work. The joint committee on infectious abortion, representing the divisions of medical sciences and the division of biology and agriculture, has established a laboratory at Lansing, Mich., known as the Central Brucella Station, for the collection and study of strains of the organism *Brucella*, which causes infectious abortion in animals and undulant fever in man. The Commonwealth Fund of New York provided funds to establish this station, while the American Medical Association, the Certified Milk Producers' Association, the Bureau of Animal Husbandry and the Michigan State College of Agriculture and Applied Science made appropriations toward the support of this work. The committee on medicolegal problems is working on the need for placing the medicolegal services of the country on a higher plane than the present system permits, to the end that the public may receive the full benefit of protection and justice which forensic medicine can offer. Research in problems of sex are being conducted at universities and scientific institutions, for which the Bureau of Social Hygiene provided the funds. The committee on the physical causes of deafness, which has been working for about four years, recently rendered a report prepared under the direction of Dr. George E. Shambaugh of Chicago.

THE APPEARANCE OF THE ELECTROCARDIOGRAM IN HEART LESIONS PRODUCED BY COD LIVER OIL TREATMENT. By Erik Agduhr and Nils Stenström. From Acta Pædiatrica, Volume VIII, IX, X. Paper. Various pagination. Uppsala: Almqvist & Wiksells Boktryckeri-A.-B., 1930.

An extensive analysis of the electrocardiogram, obtained in the various species—white and albino mice, albino rats, rabbits, dogs, pigs and calves—in the standard fashion, was made during and after the administration of cod liver oil. The results were compared with records from control animals and it was found that, within certain limits, changes in the electrocardiograms paralleled the anatomic changes. The species most susceptible to the toxic action of cod liver oil showed the most marked changes. The changes paralleled to some extent the dosage and duration of cod liver oil administration and tended to return to normal when the cod liver oil was stopped. As might have been anticipated, the changes in the electrocardiograms were not great, consisting essentially of a slight prolongation of the P-R interval, of the Q-R-S interval, and of the Q-T interval, in addition to axis shifts and changes in the level of the T. It was unusual, however, to find records that were much beyond the normal limits, although in some instances curves approached the appearance of bundle branch block. The toxicity of cod liver oil was of the same order regardless of the source from which it was obtained. Other oils, however, did not cause these anatomic changes in white mice. Irradiation of the cod liver oil seems to reduce its toxicity. The minimum doses that gave effects were as follows: $\frac{1}{7}$ cc. of the oil per kilogram of body weight, given for a period of one year, for white mice; 0.5 cc. of oil per kilogram of body weight, daily for nine months, for the rats; 1 cc. of oil per kilogram of body weight, daily for four months, in rabbits; from 0.1 to 1 cc. of oil per kilogram of body weight, daily from eight to twenty months, in dogs; from 0.1 to 2 cc. of oil per kilogram of body weight, daily for four and a half months, in the pigs; from 0.05 to 0.08⅓ cc. of oil per kilogram of body weight, daily for from four to five months, in the calves. These doses are hidden in the body of the paper.

A GERMAN-ENGLISH TECHNICAL AND SCIENTIFIC DICTIONARY. By A. Webel. Cloth. Price, $10.50. Pp. 887. New York: E. P. Dutton & Company, 1930.

This is a comprehensive yet simple dictionary covering the fields of chemistry, botany, zoology, physiology, medicine, anatomy, mineralogy, metallurgy and electrical, structural, industrial and chemical engineering. The chemical and technical scientific terms defined far outnumber all others, but because of the happy combination of subjects included the book is, on the whole, quite well balanced. The definitions are concise, intelligible and accurate. The cross-references are simple and not so numerous as to render use of the book burdensome. Of particular value to the scientist, or to the translator who is not entirely a scientist, is the appended list of atomic weights, specific gravities, and melting and boiling points of elements, the list of signs, symbols and abbreviations used in the dictionary, and the botanic section, all three of these tables giving both the English and the German terms, with an explanation of their application, and the botanic section including also the Latin equivalent of each term given. The book is to be commended especially to students of scientific subjects and to translators of technical and scientific works, the latter of whom will find it particularly useful because of its wide scope.

GRENZSTRAHL-HAUTTHERAPIE: PRAKTISCHERLEITFADEN FÜR ÄRZTE. Von H. Fuhs, Assistent der Klinik für Dermatologie und Syphilidologie (Vorstand: Prof. Dr. L. Arzte) in Wien, und J. Konrad, Assistent der Klinik für Syphilidologie und Dermatologie (Vorstand: Prof. Dr. W. Kerl) in Wien. Mit einem physikalisch-technischen Beitrag. Von Dr. phil. Fritz Regler, Leiter der staatlich autorisierten Versuchsanstalt für röntgentechnische Materialuntersuchungen in Wien. Band XVI. Sonderbände zur Strahlentherapie. Herausgegeben von Professor Dr. Hans Meyer. Paper. Price, 9 marks. Pp. 122, with 83 illustrations. Berlin: Urban & Schwarzenberg, 1931.

Guided by their experience in more than 1,600 instances, the authors do not unreservedly agree with Bucky's assertion that in 95 per cent of skin diseases the borderland therapy should be given preference over ordinary x-rays, yet they suggest that this method deserves rather extensive application. This opinion is not only based on a survey of their therapeutic results but is also supported by the observation that borderland rays are less apt to produce comcomitant damage. The introductory general chapter is written by an expert physicist. The physical theories of the production of x-rays are thoroughly discussed in a way instructive even to a reader who is not well versed in modern physical concepts. Minute attention is paid to the biologic reaction produced by the borderland rays.

The special therapeutic part is the product of collaboration of two dermatologists. At first are discussed the contraindications, which the authors divide into permanent and transitory objections. Permanent ones include all evidences of dermatologic anomalies produced by previous irradiation. Under the heading of temporary contraindications are dermatoses which per se would be objects favorable to borderland irradiation but in which the skin by ultraviolet rays or by the administration of irritating salves developed a hypersensitiveness. Radiation should not be applied until all signs of dermal irritation have subsided. The authors emphasize that ray therapy should always be supported by other general and local treatments known to be beneficial in dermatoses, with the proviso that all topic applications should be of a nonirritating character. It is also considered important to free the area to be irradiated from all exudations, transudations and débris previous to the exposure to the rays. Under these provisions it is not only possible to reduce the single and total exposures but there is also more assurance furnished against any incidental damage inflicted by the x-rays.

An important group of indications is furnished by those conditions in which impinging on the hair papillae by the rays is deemed desirable, such as alopecia areata, favus, trichophytosis and sycosis. The authors caution against combining ultraviolet with roentgen therapy on account of deferred damage to the skin to be observed under such a method. In hypertrichosis and dermatitis papillaris capillitii the Bucky rays cannot be expected to furnish appreciable results because they lack any epilatory potency, nor do they influence the sclerotic cicatricial ridges at the edge of the hairy scalp. Bucky rays may be advantageously employed in treating all skin diseases which are characterized by the formation of specific granulations. Prominent among these are all the superficial manifestations of lupus. Remaining nodular infiltrations are at best destroyed with the diathermic needle. The same holds good of tuberculosis verrucosa cutis. In lupus erythematosus, any radiotherapy is counseled against. In the inflammatory proliferative disorders of the skin glands as a rule the ordinary x-rays are more efficient than the Bucky rays. In pyodermic processes caused by pyogenic cocci, x-rays and borderland rays are of about equal efficacy.

An appreciable percentage of atrophic and hypertrophic disturbances of the ungular matrix responds favorably to the administration of Bucky rays, especially if this treatment is combined with the oral administration of arsenic compounds. Favorable results were obtained in the various forms of paronychia. An exception was the form caused by various strains of trichophyton and favus. In the authors' experience in these instances better results are furnished by combination of surgical procedures with the application of ordinary x-rays. In localized forms of pruritus the authors give the ordinary x-rays preference over the Bucky rays. In Kraurosis vulvae the prognosis is just as doubtful under the application of borderland rays as under the administration of the ordinary x-rays.

Eczematous skin disorders show a favorable percentage of cures by the application of Bucky rays. A decided advantage of this method is the avoidance of epilation in hairy areas. In contrast to the reports of the other observers, the authors saw a great many failures in scrotal eczema. In toxic dermatitis produced by the various metallic compounds used in syphilis therapy the combination of the usual detoxifying measures with the administration of Bucky rays produced satisfactory results. In lichen ruber planus there is recommended a combination of arsenic therapy with Bucky rays. Unfortunately this irradiation is always followed by a pronounced brown pigmentation of the areas exposed. Therefore the authors suggest that only the highly developed foci should be irradiated and that this treatment, if possible, should be confined to bodily areas that are covered by clothing, thus avoiding embarrassing cosmetic changes. The verrucous and scaling forms of lichen ruber appearing on the lower leg resist the Bucky rays almost uniformly and should be treated by ordinary x-rays. In the benign forms of pemphigus vulgaris the Bucky rays occasionally produce not only disappearance of all itching sensations but also involution of the cutaneous manifestations. In pemphigus foliaceus and vegetans only failures were observed. In leukemic and aleukemic lymphadenosis and myelosis the Bucky rays quite often furnish striking relief of the annoying subjective symptoms, though a definite cure will not be obtained. Ichthyosis, keratoma palmare and keratoma plantare are almost universally refractory to the borderland rays.

The flat verrucae in juveniles as a rule promptly yielded to the Bucky rays, especially if they are supported by proper general medication. If, however, a few irradiations do not produce decided involution, this treatment may be discarded and radium or roentgen rays have to be resorted to. It is an interesting fact that any radiotherapy may be successful in the disappearance of verrucae even in areas that were not directly exposed. This may be explained as a result of immunization brought about by the products of decay in the verrucae directly irradiated. In verrucae vulgares with a tendency toward keratosis, higher doses of Bucky rays have to be resorted to. At any rate this method is indicated only if these efflorescences appear in large numbers and in groups. Simple verrucae are much more easily and promptly removed by carbon dioxide snow or by electrocoagulation.

Senile keratoma and leukoplakia of the oral mucosa are not suitable objects of roentgen irradiation or Bucky rays and should be submitted to radium or diathermic therapy. In clavus of the sole of the foot, application of Bucky rays may be considered as the method of choice. This keratosis calls for a high dosage. In Darier's disease the borderland rays in their efficacy seem to outstrip the ordinary x-rays; the former are certainly indicated in otherwise resilient cases. Lipomas, dermatomyomas and fibroma of the skin are not objects fit for the Bucky rays. The same holds good of keloids and hypertrophic scars.

While in angiomas as a rule the administration of radium furnishes satisfactory results, the Bucky rays offer strong competition, especially in the clear cutaneous forms. These rays should be applied at intervals of from five to six weeks. Repeated irradiation before the reaction has entirely subsided may produce undesirable ulceration. At any rate, permanent and good cosmetic results call for treatments extending over a long period. Ulceration of angiomas present a transitory contraindication. Irradiation should not be done until treatments with indifferent salves have produced epithelization. Nevi flammei, even those refractory to radium, are a grateful object for the administration of Bucky rays, and this form of treatment may even be considered superior over the freezing by carbon dioxide snow. Nevus papillaris and nevus verrucosus are not to any appreciable extent influenced by Bucky rays. The same may be said of sarcoma cutis. The authors have no personal experience with Bucky rays in treating multiform hemorrhagic sarcomas but refer to the excellent results that Bucky reports in such an instance. In basal cell cancers of the skin the results produced by Bucky rays compare favorably with those obtained by any other form of radiotherapy. Striking success is obtained by the Bucky rays in multiple cutaneous epitheliomas of the multicentric basal cell type. In deep seated nodular and papillary cutaneous cancers and neoplasms growing in chronically inflamed structures the Bucky rays produced only failures. The results in Spiegler's endothelioma are about

of the same character as those produced by x-rays or radiant rays.

The various forms of psoriasis seem to be favorably influenced by Bucky rays. Preparatory treatment is of great value. Of especial interest is the report of a case of pityriasis lichenoides in which Bucky rays showed not only a curative effect on the area irradiated but also an indirect influence on the areas on the same side of the trunk that were not exposed. Poikiloderma vascularis, though refractory to other treatments, is favorably influenced by Bucky rays. The latest observations of the authors seem to guarantee the Bucky rays a prominent place in the treatment of lymphogranulomatosis inguinalis.

A survey of the general treatments to be combined with irradiation and a table of dosage present an appropriate ending of this book. It is to be expected that this publication will furnish a powerful stimulus for the extensive use of this latest accomplishment in radiotherapy.

CLINICAL DIETETICS: A TEXTBOOK FOR PHYSICIANS, STUDENTS AND DIETITIANS. By Harry Gauss, M.S., M.D., F.A.C.P., Instructor in Medicine, University of Colorado School of Medicine, Assisted by E. V. Gauss, B.A. Cloth. Price, $8. Pp. 490, with 59 illustrations. St. Louis: C. V. Mosby Company, 1931.

This is a well written, interesting piece of literature. The discussion of the history of diet is excellently done and throughout the book the story is told in a literary style which leaves nothing to be desired. The book itself is well made and well illustrated. From a practical point of view, however, not as much can be said. It is in many instances one sided and in other instances mistaken. For example, the continuous reference to the necessity of roughage does not consider at all Alvarez's more recent studies on this subject. It seems that the status of roughage is therefore not given the scientific consideration which it deserves but is treated in the "faddist" manner so common in American dietetics. There is on page 118 a criticism of a business man's lunch which carries dietary criticism beyond practical living. In the description of the functional diseases of the gastro-intestinal tract too much attention is paid to the dietary factors, and the case reports suggest that whatever therapeutic results were obtained were probably due to the other factors of treatment. A description of the normal diet as "one that will satisfy normal physiologic needs while disregarding the customs of that person" is such an unpractical dictum as to be impossible of acceptance. Sometimes in polyglot America the normal diet for the Russian immigrant is of necessity different from the diet of an Italian whose physical and caloric needs may be exactly alike. In the description of renal-vascular disease the grouping of all types of nephritis, nephrosis and sclerosis under the same therapeutic formula is certainly inconsistent with the more advanced methods of handling this complicated situation. Other examples might be cited to show that this book is lacking in practicability.

TREATMENT OF INJURY BY THE GENERAL PRACTITIONER. By Clay Ray Murray, M.D., F.A.C.S., Assistant Professor of Surgery, College of Physicians and Surgeons, Columbia University. In Two Volumes. Harper's Medical Monographs. Leather. Price, $5 per set. Pp. 412, with 196 illustrations. New York: Harper & Brothers, 1931.

In these two small books, Dr. Murray has given the general practitioner the benefit of his large and careful experience in the treatment of injuries of bones and soft tissues. Because most of these injuries are seen first by the general practitioner, Dr. Murray has well chosen to present his advice on treatment to him rather than to the specialist. The author discusses in detail the treatment of contusions, wounds, concussion and burns. He devotes much space to the treatment of fractures and dislocations. He does not spend much time on the question of differential diagnosis but confines his efforts to the elucidation and teaching of the treatment. He does not recommend an "ideal" method of treating the individual injury but attempts to impress on the general practitioner the importance of adapting the treatment to the patient. He takes into consideration the psychology of the patient. Dr. Murray emphasizes the importance of consultation when advisable. He impresses one with the fact that common sense is a necessary adjunct in the treatment of injury. He does not hesitate to depart widely from the conventional method in the treatment. The illustrations, though crude in many instances, are valuable for teaching purposes. Incidentally, most of them were made by the author himself. The author's qualifications are excellent as a student, a practitioner and a research student. No doubt many of the principles stated are reflections of his excellent teacher, Dr. Darrach.

L'UNIFICATION DE LA TERMINOLOGIE MÉDICALE. Rapports présentés à le 1re et à la 2me réunion de la Fédération de la Presse Médicale Latine. Par le Dr. Pierre J. Rondopoulos, directeur et rédacteur en chef de la "Grèce Médicale." Paper. Price, 10 francs. Pp. 83. Syra (Grèce): "Grèce Médicale," 1931.

This book contains three papers presented by the author at the first and second sessions of the congress of the Federation of the Medical Press of Latin Countries, held in Paris in April, 1927, and in Brussels in September, 1930. The need of unification of medical terminology is well known. Better standards for the formation of new medical terms must be established, while the large number of inexact or incorrect terms in modern medical terminology are sorely in need of correction. These papers constitute the beginning of the realization of the author's long and arduous task. The medical dictionary that Professor Rondopoulos was appointed by the committee of the federation to prepare will contain much valuable philologic information and many explanations of errors to be found in the existing medical terminology. The problem of the unification of medical terminology, as studied by the author on the recommendation of the Federation of the Medical Press, has recently captured the interest of the Academy of Medicine of Paris. The author holds rightly the opinion that the proposed new dictionary of medical terminology will likewise be of interest to the Anglo-Saxon nations. Pages 25-83 contain detailed discussions of medical terms derived chiefly from the Greek, in which many errors are pointed out. These sixty pages furnish abundant evidence of the great philologic value of the forthcoming dictionary, which bids fair to be epoch making in its scope.

THE FACTOR OF INFECTION IN THE RHEUMATIC STATE. By Alvin F. Coburn, M.D., Resident Physician of the Presbyterian Hospital in the City of New York. Cloth. Price, $6. Pp. 288, with illustrations. Baltimore: Williams & Wilkins Company, 1931.

The author of this monograph has used a most apt and inclusive term for what physicians have been in the habit of calling rheumatic fever. He emphasizes the wide variety of visceral and peripheral manifestations, functional, as well as organic disturbances, and the variations in severity from the mildest forms which escape their true valuation to the severe and fulminating types with hyperpyrexia, which are being less frequently seen today. His ideas on the subject show that he has had a wide experience with the disease. The conclusion that there is no demonstrable relationship between rheumatic fever and bacterial endocarditis except that incidental to other types of valvular disease does not agree with the experience of others. The annual and seasonal variations and incidence are well illustrated by many cases closely followed. There is ample demonstration that the incidence as well as the virulence of the disease follows the incidence of the respiratory infections. In fact, the most important single factor of environmental effect in maintaining the activity and frequency of the rheumatic state was found to be the factor of respiratory infection. The disease is uncommon to inhabitants of the tropics, and the reactions of the patients in the transplantation experiments described are interesting. The Porto Ricans who came to New York not uncommonly acquired the disease, while children who well illustrated the active rheumatic state when removed to Porto Rico quickly recovered, only to relapse again when they returned to New York, where they were again exposed to the increased incidence of respiratory infections, in which it was found that the hemolytic streptococcus was the most important bacterial agent. Observations on groups of infected and uninfected individuals showed no definite evidence that the standard of living was an especially important factor as long as the incidence of respiratory disease was the same. The special studies on the upper respiratory flora again allowed the conclusion that respiratory infection in which the streptococcus was present was the single most important factor. The earlier chapters of the book will give to the student the necessary broad conception of this disease, and the later ones will be of particular interest to the clinical observer, who will find experimental proof of observations that he has made.

Medicolegal

Hemiplegia, Trauma and Workmen's Compensation

(Powers Storage Co. v. Industrial Commission (Ill.), 173 N. E. 70)

Ballauer stooped over in the course of his employment. He became dizzy and had "a funny feeling all over." He fell, striking his head, and was unable to get up; he had suffered "a stroke of paralysis" over the entire side, including the face. No mark was left on his head when it struck the floor; there was no discoloration or other evidence of trauma. The industrial commission awarded Ballauer compensation under the workmen's compensation act, and the award was confirmed by the circuit court, Cook County. Ballauer's employer thereupon appealed to the Supreme Court of Illinois, where judgment of the court below was affirmed.

Expert testimony was divided as to whether dizziness arising out of and in the course of Ballauer's employment caused the fall and the subsequent hemiplegia, or incipient hemiplegia caused the dizziness and the fall. Expert witnesses for the employer believed that the fall resulted from the hemiplegia and that there was no causal relation between Ballauer's work and the fall. They assumed that Ballauer had a preexisting trouble that produced paralysis, without any intervening factor. That very assumption, however, said the Supreme Court, accompanied by the admitted fact that work such as Ballauer was engaged in would tend to increase the danger, brought the case directly within the reason of *Jones Foundry Co.* v. *Industrial Comm.*, 303 Ill. 410, 135 N. E. 754, in which it was held that when an employer accepts an employee, he accepts him in the physical condition in which he is, and that the employer is liable for any accidental injury occurring to that employee arising out of and in the course of his employment. On behalf of the employer, it was contended further that Ballauer showed no objective symptom of injury and that the workmen's compensation act called for compensation only for injuries accompanied by objective conditions, not within the physical or mental control of the injured employee. It is true, said the court, that the injury was to the brain and that the injury was not shown by an examination of the brain. Such an injury, however, has a characteristic result, which was present in this case, and that result was an objective symptom proving the injury. Complaint was made that the arbitrator for the workmen's compensation board refused to strike out the conclusion of a physician that the hemiplegia was traumatic and not idiopathic, which conclusion was based on both objective symptoms and subjective complaints. But though a physician who examines a person for the purpose of testifying concerning his condition cannot testify to conclusions based in part on the history of the case as given by the patient and in part on objective symptoms, that rule does not apply where, as in this case, the physician examines the patient, not in preparation for testifying, but solely for the purpose of treatment.

Blindness Following Attempted Injection into Nasal Ganglion

(Langford v. Kosterlitz (Calif.), 290, P. 80)

Attributing total blindness in his right eye to negligent and unskilful treatment for asthma, administered by the defendant physician, Langford obtained a judgment against him for $15,000, in the trial court. This judgment was affirmed by the district court of appeal, first district, division 1, California.

Langford had been suffering from asthma for some time. Treatment, including the removal of part of the middle turbinate bone and of some infected ethmoid cells, had given only temporary relief. He consulted the defendant physician, who, according to the patient's testimony, told him that he could absolutely cure his condition by a simple operation that took only a few minutes. A few hours later, on the same day, the defendant administered the treatment. The only examination that he had made, the patient testified, was to look into the patient's nostrils. The patient suggested that the defendant consult the physician who only a few months before had removed part of the middle turbinate bone and some infected ethmoid cells, but the defendant did not do so. As recounted by the patient, the defendant inserted a metal tube 4 or 5 inches long into the patient's right nostril and forced it through the wall of the nostril into the head. The patient could feel and hear it crushing through the bone. Alcohol and novocaine were then injected through a hypodermic needle passed through the tube. Instantly the patient had a sensation of a spark in his right eye and was blinded. At the time of his testimony, he had seen nothing out of that eye since the operation. The defendant physician, the patient testified, told him at the time of the operation that the blindness was due to the formation of a blood clot against the optic nerve and that the clot would dissolve in a day or so; also, that the physician explained later that this was the first time he had injected alcohol and novocaine together; always before he had injected novocaine first and alcohol afterward, and that he saw now that this was the wrong way to make the injection and that he would never do it again. The physician denied substantially all of the patient's testimony, saying that he performed the operation in the same manner and with the same care that he had used in performing similar operations previously.

A physician shown to be a specialist in diseases of the eye, ear, nose and throat testified that in operating to kill the nasal ganglion it is not possible for the fluid injected into the nasal passage to reach the optic nerve without first penetrating or crushing the bony formation between the ganglion and the optic nerve on the corresponding side. There is a definite bony partition between the nerve and the ganglion. The needle would have to be at or in the optic nerve to produce the instantaneous result of a flash and the loss of sight on the injection of the fluid. A man with reasonable skill and care would so guard his every move that he would not puncture the bony partition. The witness testified that asthma may be the result of varying causes and in order to attempt to cure it a very careful investigation should be made. In view of the undisputed fact, said the court, that the physician about to administer treatment knew of the operation that had been done on the patient's nose, from which a portion of the middle turbinate bone and some infected ethmoid cells had been removed, it would seem, almost as a matter of common knowledge as well as a matter justified by expert testimony, that the physician about to operate, before going on with the operation, should consult the physician who had previously operated. There was certainly a substantial conflict of evidence. The matter having been submitted to the jury, its finding of negligence could not be disturbed.

Malpractice: Negligence in Reducing Fracture; Waiver of Privileged Communications.—Ordinarily the pain attendant on a fracture does not continue for more than seventy-two hours after reduction. Pain for a longer period indicates that the parts are not in proper position and are not uniting, although it may indicate other adverse conditions as well. The continued grating of the broken ends of a bone indicates nonunion. In the presence of these symptoms, proper practice requires an investigation, either by palpation or through the use of roentgen rays, to determine whether the parts of the bone are in correct position and are uniting. A physician is not an insurer of a correct diagnosis or correct treatment, but he is required to use reasonable care and skill in both diagnosis and treatment. If he has notice of such facts as should put him on inquiry as to the character of the fracture and the condition of the bone and fails to use reasonable care and skill in diagnosis and treatment, he becomes responsible. Proof of injury and damage must be reasonably definite and certain and must warrant more than mere conjecture or speculation. Where the expert testimony is to the effect that, considering the location and character of a fracture, permanent disability and impairment of the arm might have resulted even though the treatment was skilful and proper, and where there is no evidence that such impairment and disability would not have resulted, the patient cannot recover damages therefor. Where it is fairly inferable from the record that additional pain, suffering, inconvenience and expense were caused by the failure of the fractured bone to unite, the patient may recover therefor. A patient may waive the provision of a statute that a physician may not, without the consent of his patient, be examined as to any information acquired in the course of attendance, which is necessary to enable him to prescribe or act for the patient. When a patient

calls his physician as his witness and examines him with respect to his, the patient's, condition at the time of the treatment, he thereby waives the privilege and makes it possible for the other party to examine the physician fully and at length as to all relevant matters.—*McDonnell v. Monteith (N. D.), 231 N. W. 854.*

Medical Practice Acts: Notice Requirement in Revocation Proceeding When Hearing Is Postponed.—The Missouri medical practice act provides that, in a proceeding to revoke a physician's license, notice be served on him in writing, containing a statement of the charges and the place and date set for the hearing. This provision is to be interpreted as denying the licensing board authority to revoke a license, except on notice and hearing and after an opportunity to defend. A physician was notified to appear before the board, March 19, 1925, to answer a complaint filed against him, on which the board proposed to revoke his license. On the day set, the board was busy with other matters and adjourned without hearing the physician's cause. The board met again, April 1, without notice to the physician, heard the cause in the physician's absence, and revoked his license. As the hearing was not held on the day set, said the Supreme Court of Missouri, the physician was entitled to official notice of any other hearing date. If the physician had appeared and defended, without objecting, he would have waived notice and estopped himself. He knew nothing about the date of the postponed hearing, however, and he was not charged with the duty of ascertaining the date. The physician was therefore deprived of his right to a notice and an opportunity to defend.—*State ex rel. Kerr v. Landwehr, Circuit Judge (Mo.), 32 S. W. (2d) 83.*

Malpractice: Patient's Right to Rely on Professional Skill of Physician.—It is no part of the duty of a patient to distrust his physician or to set his judgment against that of the physician whom he has employed to treat him. The very relation assumes trust and confidence on the part of the patient in the capacity and skill of the physician. It would require an unusual state of facts to render a person who is possessed of no medical skill guilty of contributory negligence because he accepts the word of his physician and trusts in the efficacy of the treatment prescribed by him. A patient has the right to rely on the professional skill of his physician, without calling others in to determine whether he really possesses such skill or not. In an action to recover damages for malpractice, if it is shown that the injuries for which recovery is sought resulted from negligence on the part of the patient, either alone or in conjunction with negligence on the part of the physician, the patient has no right to recover damages from the physician. When a physician has been guilty of negligence causing injury to the patient, and the patient subsequently, by his own want of care, aggravates that injury, the physician will be liable only for the injury resulting from his own negligence and not for the aggravation caused by the negligence of the patient.—*Halverson v. Zimmerman (N. D.), 232 N. W. 754.*

Malpractice: Res Ipsa Loquitur.—The doctrine of res ipsa loquitur does not apply to pain or unfortunate consequences attending the extraction of a tooth. The rules governing the duty and liability of physicians and surgeons are applicable to practitioners of dentistry. Such practitioners are required to exercise such reasonable and ordinary care, diligence and skill as are employed and exercised by dentists in like cases in the same neighborhood, pursuing the same line of practice. Unless they so expressly agree and undertake, dentists are not held to warrant a cure, or a painless or even a successful operation. They are not liable for honest mistakes or errors of judgment in making a diagnosis or prescribing a mode of treatment, where the proper course is subject to reasonable doubt. The burden is on the patient to show negligence or the want of proper knowledge and skill on the part of the dentist.—*McTyeire v. McGaughy (Ala.), 130 So. 784.*

Medical Practice Acts: Chiropractic as the Practice of Medicine; Injunction to Restrain Enforcement.—The fact that chiropractic is not named in the medical practice act of Pennsylvania does not mean that chiropractors are exempt from the provisions of that act. The expression "practice of medicine" covers and embraces everything that by common understanding is included in the term "healing art." Chiropractic is therefore comprehended in the term "practice of medicine." Specialists in and advocates of any particular branch or division of medicine or surgery, by whatever newly coined word it may be known, said the Supreme Court of Pennsylvania, should know that the declared policy of the state of Pennsylvania regulating the practice of medicine and surgery is that no person shall engage in the practice of that profession in the state without complying with the statutory requirements as to professional qualifications. An injunction will not be granted, as a general rule, to stay criminal or quasicriminal proceedings. If the statute on which the prosecution is based is valid, the fact that its enforcement will materially injure business or property constitutes no ground for equitable interference. It is only where the statute is unconstitutional or otherwise invalid, and where in the attempt to enforce it there is a direct invasion of property rights resulting in irreparable injury, that an injunction will issue to restrain the enforcement thereof.—*Long v. Metzger (Pa.), 152 A. 572.*

Privileged Communications: Physical Examination for Purpose of Testifying.—When a person is examined by a physician at the instance of, or with the approval of, officers of the law, for the purpose of testifying, and when the person so examined does not protest and knows that the examination is solely to qualify the physician to testify, such a person cannot thereafter object to the testimony of the examining physician on the ground that it is forbidden by the statute of privileged communications.—*Norwood v. State (Miss.), 130 So. 733.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, French Lick, Indiana, September 14-19. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Academy of Physical Therapy, Montreal, September 3-4. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pa., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, White Sulphur Springs, W. Va., September 14-16. Dr. M. A. Tate, 19 West Seventh Street, Cincinnati, Secretary.

American College of Surgeons, New York and Brooklyn, October 12-16. Dr. Franklin H. Martin, 40 East Erie St., Chicago, Director-General.

American Congress of Physical Therapy, Omaha, October 5-8. D. F. L. Wahrer, 22 South Center Street, Marshalltown, Iowa, Secretary.

American Public Health Association, Montreal, September 14-17. Dr. Kendall Emerson, 450 Seventh Avenue, New York, Acting Executive Secretary.

American Roentgen Ray Society, Atlantic City, September 22-25. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.

Associated Anesthetists of the United States and Canada, New York, October 12-16. Dr. F. H. McMechan, 770 Westlake Road, Avon Lake, Ohio, Secretary.

Colorado State Medical Society, Colorado Springs, September 15-17. Mr. Harvey T. Sethman, Metropolitan Building, Denver, Executive Secretary.

Delaware, Medical Society of, Wilmington, October 13. Dr. W. O. La Motte, Medical Arts Building, Wilmington, Secretary.

Idaho State Medical Association, Boise, September 29-30. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, Indianapolis, September 23-25. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Sec'y.

Kansas City Southwest Clinical Society, Kansas City, Mo., October 5-10. Dr. Joseph E. Welker, 906 Grand Avenue, Kansas City, Mo., Secretary.

Kentucky State Medical Association, Lexington, September 7-10. Dr. Arthur T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Pontiac, September 22-24. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Nevada State Medical Association, Ely, September 18-19. Dr. H. J. Brown, 120 North Virginia Street, Reno, Secretary.

Pacific Association of Railway Surgeons, Yosemite Valley, August 28-29. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.

Pacific Northwest Orthopedic Association, Vancouver, British Columbia, September 5. Dr. Charles McClure, 322 Alder Street, Portland, Ore., Secretary.

Pennsylvania, Medical Society of the State of, Scranton, October 5-8. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Vermont State Medical Society, Rutland, October 8-9. Dr. William G. Ricker, 31 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Roanoke, October 6-8. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Wisconsin, State Medical Society of, Madison, September 9-11. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics & Gynecology, St. Louis

21: 765-932 (June) 1931

Address of Chairman of Committee on Prenatal and Maternal Care. F. L. Adair, Chicago.—p. 767.
Undergraduate Teaching of Obstetrics. P. Findley, Omaha.—p. 783.
Graduate Education of Physicians in Obstetrics. R. W. Holmes, Chicago.—p. 809.
Obstetric Training of Nurses and Attendants. G. W. Kosmak, New York.—p. 828.
Education of Midwives. J. R. McCord, Atlanta, Ga.—p. 837.
Maternal and Early Infant Care. J. O. Polak, Brooklyn.—p. 852.
Factors and Causes of Fetal, Newly Born and Maternal Morbidity and Mortality. H. Ehrenfest, St. Louis.—p. 867.
Basic Sciences and Their Relation to Maternal and Fetal Problems. L. B. Arey, Chicago.—p. 880.

American Journal of Ophthalmology, St. Louis

14: 483-576 (June) 1931

Operation to Shorten a Rectus Muscle with Buried Sutures. W. B. Lancaster, Boston.—p. 483.
Some Considerations of Muscle Surgery, with Especial Reference to Tucking Method. F. E. Burch and H. W. Grant, Saint Paul.—p. 489.
*Estimation of Total Refractive Error Without a Cycloplegic. D. Smith, Bridgeport, Conn.—p. 498.
Barraquer Cataract Operation (Modified). O. R. Wolfe, Marshalltown, Iowa.—p. 510.
Brief Statement Concerning Onchocercosis in Mexico. R. Silva, Mexico City.—p. 518.
*Use of Epinephrine in Progressive Myopia. M. Wiener, St. Louis.—p. 520.
Etiology and Chemical Nature of Cataractous Lenses. P. W. Salit, Iowa City.—p. 523.

Estimation of Total Refractive Error.—Under the title of cyclodamia, Smith describes a special method of refraction in which the probable total error is ascertained without cycloplegia, by the expedient of discovering the spherical refractive component that (combined with the approximate astigmatic correction) barely yields vision of 6/60, and taking 1.50 D. sphere from this lens combination. Once the principles and methods of cyclodamia are well understood, it is easier and quicker than cycloplegia, and may well replace it in young people as well as old, if recourse is had to cycloplegia whenever relaxation is poor or accommodative behavior is irregular. Since it differs from all other noncycloplegic methods in that the total error is what it reveals or approximates when good relaxation is obtained, it should always be followed by a fogging and manifest examination, and the correction should be determined as a variation from the total error, just as after a cycloplegic.

Use of Epinephrine in Progressive Myopia.—Further experience has confirmed Wiener's impression that the persistent use of epinephrine in the eyes tends to inhibit the progressive development of myopia. He believes that there is a certain type of progressive myopia that is favorably influenced by exercise and local instillation of epinephrine. On the other hand, another type definitely suggests some other factor the nature of which is not yet clear.

American Journal of Physical Therapy, Chicago

8: 65-92 (June) 1931

Diathermy in Otolaryngology. G. B. Rice, Boston.—p. 69.
Physical Therapeutics in Ophthalmic Practice. W. D. Rowland, Boston.—p. 73.
What About Shoes? N. D. Mattison, New York.—p. 76.
Electrodiathermic Operation for Tonsils. T. M. Stewart, Cincinnati.—p. 80.
Treatment of Tuberculosis by Physical Agents. W. B. Chapman, Carthage, Mo.—p. 82.
Painful Feet. W. Martin, Atlantic City, N. J.—p. 86.

American Journal of Physiology, Baltimore

97: 397-571 (June 1) 1931

Relation of Level of Transection of Brain Stem to Occurrence of Decerebrate Rigidity in New-Born Rabbits. A. M. Griffin and W. F. Windle, Chicago.—p. 397.
*Some Observations on Circulation in Experimental Mitral Stenosis. J. H. Powers, C. Pilcher and M. A. Bowie, Boston.—p. 405.
Effect of Stimulation on Degeneration of Severed Peripheral Nerve. D. D. Cook and R. W. Gerard, Chicago.—p. 412.
Simultaneous Study of Constituents of Sweat, Urine and Blood, Also Gastric Acidity and Other Manifestations Resulting from Sweating: VIII. Blood Changes. G. A. Talbert, A. K. Saiki, R. C. Carpenter, J. Bergmeyer, H. Staff, C. Borman and D. Freeman, Grand Forks, N. D.—p. 426.
Urea Clearance Test in Normal Dogs. E. P. Ralli, M. Brown and A. Pariente, New York.—p. 432.
Studies on Heart Block in Terrapin. A. H. Hurd, Baltimore.—p. 439.
Further Studies on Composition of Saliva in Different Phases of Secretion. H. Baxter, Montreal, Canada.—p. 450.
*Experimental Studies on External Secretion of Pancreas with Especial Reference to Effect of Its Complete Loss by Permanent Pancreatic Fistula: I. Coincident Changes in Chemistry of Blood. II. Mechanism of Death. J. M. McCaughan, Rochester, Minn.—p. 459.
*Effect of Epinephrine on Muscle and Liver Glycogen. J. Sacks, Chicago.—p. 467.
Influence of Varying Amounts of Carbohydrate, Fat, Protein and Water on Weight Loss of Hogs in Undernutrition. R. W. Keeton, Helen MacKenzie, Selma Olson and Louise Pickens, Chicago.—p. 473.
Influence of Spinal Irradiation on Cutaneous Sensations. I. Localization of Pain and Touch Sensations Under Irradiation. E. Gellhorn, H. Gellhorn and J. Trainor, Eugene, Ore.—p. 491.

Circulation in Experimental Mitral Stenosis.—Powers and his associates made observations on some phases of circulation of five male dogs with experimental mitral stenosis. The cardiac output of four of the animals ranged between 104 cc. and 230 cc. per kilogram a minute; the average was 171 cc. These figures are within the range of normal. The output of the fifth animal was distinctly elevated, being 323 cc. per kilogram a minute. The basal pulse rate was increased in four instances and normal in the fifth. The blood pressure was elevated in only one case. An increase in the percentage of red blood cells occurred at the expense of the plasma. The size of the heart as determined by the roentgen shadow showed a progressive enlargement in all five dogs. Significant changes were not observed in the electrocardiographic tracings.

External Secretion of Pancreas.—According to McCaughan, a moribund dog with total pancreatic fistula can be restored apparently to a normal state by oral administration of whole pancreatic juice; intravenous administration does not have such an effect. The administration intravenously of physiologic solution of sodium chloride daily during the period of total drainage will prolong life and maintain normal chemistry of the blood. The administration of the dialyzable and nondialyzable fractions of whole pancreatic juice was not of appreciable benefit as a life-saving measure in the amounts given. The essential cause of early death following total drainage of pancreatic juice is not entirely clear. In general, an important part must be played by the loss of salts, water and proteins by way of the pancreatic juice and gastric vomitus.

Effect of Epinephrine on Muscle and Liver Glycogen.—Sacks found that the glycogen content of the muscles of cats that had fasted twenty-four hours ranged from 0.7 to 1.4 per cent. Under anesthesia induced by barbituric acid compounds the glycogen content of the liver was not appreciably affected in one and a half hours but was reduced one fourth in three hours. Large doses of epinephrine caused a marked decrease in the liver glycogen of cats and a slight but definite decrease in the muscle glycogen. Small doses of epinephrine caused a definite decrease in the liver glycogen but did not have a demonstrable effect on that of the muscles.

American Journal of Public Health, New York

21: 605-714 (June) 1931

View of Health and Disease Based on Rise and Fall in Levels of Life with Cycles in Vitamin Tides. W. A. Price, Cleveland.—p. 605.
Physical Findings in New York City Continuation School Boys. J. Meyers, New York.—p. 615.
Mortality from Puerperal Septicemia in United States. G. E. Harmon, Cleveland.—p. 633.
Immunization of Dogs Against Rabies by One-Injection Method. H. W. Schoening, Washington, D. C.—p. 637.
Birth Records of Illegitimates and of Adopted Children. S. L. Howard and H. B. Hemenway, Springfield, Ill.—p. 641.
Fungus Infections of Skin of Industrial Workers. R. T. Legge, Berkeley, Calif.—p. 648.

Am. J. Roent. & Rad. Therapy, Springfield, Ill.

25: 715-854 (June) 1931

*Coccidioidal Granuloma: Roentgen Diagnosis. R. A. Carter, Los Angeles.—p. 715.
*Osteitis Fibrosa Cystica Generalisata with Hyperparathyroidism as Etiology. R. Dresser and A. O. Hampton, Boston.—p. 739.
*Kümmell's Disease with Report of Roentgenologically Proved Case. L. G. Rigler, Minneapolis.—p. 749.
Encephalography: Explanation of Possible Error in Technic. E. P. Pendergrass, Philadelphia.—p. 754.
Intra-Uterine Roentgen Cephalometry and Pelvimetry. H. J. Walton, Baltimore.—p. 758.
*Treatment of Osteogenic Sarcoma by Means of Irradiation. G. E. Pfahler and L. D. Parry, Philadelphia.—p. 761.
Protracted Fractional Method of Roentgen Therapy (Coutard). A. Zuppinger, Zurich, Switzerland.—p. 784.
Cancer Problem, Present and Future. W. H. Kraemer, Philadelphia. —p. 793.
Unusual Case of Traumatic Pneumocephalus. R. B. Taft, Charleston, S. C.—p. 800.
Unusual Migration of Foreign Body. W. A. Evans, Detroit.—p. 802.

Coccidioidal Granuloma.—Carter states that coccidioidal granuloma is roentgenographically similar to tuberculosis. Features of pulmonary and osseous involvement will in some cases permit a provisional diagnosis between them. The association of pulmonary and extrapulmonary lesions in some cases is suggestive. The roentgenologist may thus promote recognition of the disease although he cannot make a positive diagnosis. The resemblance to blastomycosis is greater than to tuberculosis and distinction would seem difficult, if not impossible. In viewing films of osteomyelitis of bone and tuberculosis-like lesions of lungs, one may consider the possibility of coccidioidal granuloma, blastomycosis and other infectious granulomas.

Osteitis Fibrosa Cystica.—Dresser and Hampton give a description of the symptoms, etiology, pathology and treatment of generalized osteitis fibrosa cystica associated with overactivity of the parathyroids. Roentgen changes are described which are characteristic in the well advanced stage of the disease. A palpable tumor of the parathyroid was present in a number of cases. Even though a tumor cannot be palpated, if the patient presents the roentgen picture described and shows at the same time an elevation of calcium in the blood and urine with a decrease in blood phosphorus, an exploratory operation is warranted. Remarkable clinical improvement follows the successful extirpation of a parathyroid tumor. The removal of normal parathyroid tissue is to be avoided if possible.

Kümmell's Disease.—Rigler believes that many of the reports of Kümmell's disease may likely be merely cases of delayed symptoms following an unrecognized vertebral fracture. The diagnosis of Kümmell's disease is hardly justified unless a careful roentgen examination made after the injury is negative and later roentgenograms show changes. The degree of disability following spinal injury cannot be foretold even if one or more of the vertebrae are obviously fractured. Some of the others, although apparently normal at the outset, may later develop compression. Every patient with spinal injury, no matter how slight, should be carefully examined roentgenologically, and, if any symptoms continue, the examination should be repeated at intervals. A case of spinal injury first seen two months after the accident is reported. Although there was at that time an obvious compression fracture of two of the vertebral bodies, the remainder of the spine appeared normal. Seven months later, definite compression of two of the previously normal appearing thoracic vertebrae could be seen. This case fulfils the criteria of a true case of Kümmell's disease.

Treatment of Osteogenic Sarcoma by Irradiation.—On the basis of a study of fifty-eight cases of osteogenic sarcoma treated by irradiation, together with a review of similar work done in other clinics, Pfahler and Parry feel justified in concluding that the only two methods of treatment for this disease are irradiation or surgery, or the two combined. The results from irradiation seem to be at least as good as, and the authors believe better than, those obtained by surgery alone. Preliminary irradiation of the tumor area and irradiation of the pulmonary area, followed by amputation, has given the best results to date. A biopsy for diagnosis is desirable but should be preceded by a preliminary thorough course of high voltage roentgen therapy for a month preceding the biopsy. An accurate diagnosis is still the most important single element in the therapeutic management of osteogenic sarcoma.

American Review of Tuberculosis, Baltimore

23: 643-746 (June) 1931

*Pulmonary Asbestosis: II. Pure Case. K. M. Lynch and W. A. Smith, Charleston, S. C.—p. 643.
*Alternating Artificial Pneumothorax. I. D. Bronfin, Denver.—p. 661.
*Oleothorax. L. E. Oppengame, New York.—p. 673.
Id. P. Dufault, Rutland, Mass.—p. 683.
*Healing of Tuberculous Cavities. L. H. Fales and E. A. Beaudet, Livermore, Calif.—p. 690.
*Observations on Effects of Smallpox Vaccination on Tuberculosis Patients. R. E. Stone, St. Louis.—p. 706.
*Effect of Quinine on Tubercle Bacillus. A. J. Levy, Chicago.—p. 710.
*Complement Fixation with Urine in Tuberculosis. Marian E. Parker, Northville, Mich.—p. 733.

Pulmonary Asbestosis.—Lynch and Smith report a pure case of long standing asbestosis, with consequent extreme hyaline fibrosis of the lungs, and consequent obliteration of a large part of air-bearing tissue, emphysema, bronchiectasis, increased pulmonary resistance to the circulation, hypertrophy of the right heart with eventual degeneration, fibrosis and congestion of the heart, progressive heart failure, with generalized passive congestion of the viscera, and death from slow cardiac failure, the natural end-result of uncomplicated disease of the lungs of this extent and character. Of interest in the lung changes was the presence of the common laminated hyaline fibrous nodule, which has been described heretofore as a characteristic lesion of the fibrosis of pulmonary silicosis.

Alternating Pneumothorax.—Bronfin treated six patients with far advanced pulmonary tuberculosis by means of alternating or successive pneumothorax and observed their clinical course for from two and one-half to seven years. On the basis of his observations he concludes that many patients who develop contralateral disease during the course of pneumothorax therapy, or who have bilateral disease equally distributed, can be treated successfully by means of alternating pneumothorax, and that in some instances one may even accomplish a complete arrest of the disease.

Oleothorax.—Oppengame states that the indications for oleothorax are to avoid adhesions, to produce a more effective collapse when pneumothorax is unsuccessful, to give more rigidity to the pleura if a bulging of the mediastinum occurs, to close a perforation of the lung, to change an empyema into a sterile disinfectant oil, and finally, in rare cases, when on account of social conditions a patient cannot continue with routine insufflations. For the last six years he has treated and observed many patients and has not had one death caused directly by oleothorax treatment. He believes that the fatalities in the reported cases of death after oleothorax treatments are caused by the neglect by physicians of the pressure that is produced by the oil. The measurement of pressure is the most important factor. The pressure of air above the level of the oil is easy to control with the water manometer of a pneumothorax apparatus, but the pressure developed from oil on the pleural wall is difficult to measure.

Healing of Tuberculous Cavities.—Fales and Beaudet do not agree with the authorities who believe that the tuberculous cavity is the death sentence of the bearer. In their investigations they found that a surprisingly large percentage of cavities healed. They found that the capacity of cavities to heal depended greatly on two factors: (1) the size of the cavity, and (2) the amount of the pulmonary involvement. They believe that the rest treatment is of greater importance in the healing of cavities than artificial pneumothorax, thoracoplasty or other surgical measures. In the average cavity case, which is not definitely retrogressive, and is without elevation of temperature, rest should be the treatment selected for at least twelve or eighteen months. Then if the cavity does not show a tendency to heal, one should resort to pneumothorax or other surgical procedures in suitable cases. In bilateral cavitation, the prognosis is not good. In order to attain the best results, rest must be prolonged, continuous and without interruption. Patients with cavitation should rest for from twenty to twenty-four hours each day. In the authors' series it was found that, when the treatment was interrupted, 30 per cent of the cavities healed, whereas, when the hospitalization was continuous, 41 per cent healed.

Vaccination of Tuberculosis Patients.—Stone reports that only three of a total of 337 patients who were vaccinated

showed some tuberculous changes. If one considers the usual mortality in a smallpox epidemic and the probable increase in mortality in a group of persons already weakened by disease, then the extremely few unfavorable results noted should not be set up as a contraindication to vaccination. On the contrary, vaccination should be recommended in tuberculosis, either active or nonactive, as a justifiable prophylactic measure.

Effect of Quinine on Tubercle Bacillus.—Levy treated guinea-pigs for three weeks with quinine and then inoculated them with a large dose of tubercle bacilli. These animals lived longer and their body weights were much higher than other guinea-pigs that were first injected with the same dose of tubercle bacilli and in which the quinine treatment did not start till three weeks later.

Complement Fixation with Urine.—Four hundred and eighty-three complement-fixation tests for the detection of tuberculosis were performed by Parker on urines of tuberculous and nontuberculous individuals. The results were compared with clinical observations in each case. From fifteen necropsies the kidneys were studied for tuberculous lesions and complement-fixation tests were done on the postmortem urines. It was noted that: 1. The presence of specific antigens or antibodies in the urine, as demonstrated by complement fixation, is highly indicative of a tuberculous lesion somewhere in the body, but not necessarily in the urinary system. 2. A negative test does not have diagnostic significance.

Annals of Surgery, Philadelphia

93: 1121-1290 (June) 1931

*Surgical Treatment of Blepharospasm. C. H. Frazier, Philadelphia.—p. 1121.
Treatment of Pulmonary Abscess by Bronchoscopy. H. J. Moersch, Rochester, Minn.—p. 1126.
Thyroidectomy Performed with Radio-Knife: Conclusions Based on 160 Operations. A. S. Jackson, Madison, Wis.—p. 1132.
Obstructive Jaundice: Its Surgical Aspects. W. Walters, Rochester, Minn.—p. 1137.
Intermittent Jaundice Due to Neuroma of Cystic and Common Bile Ducts. M. W. Comfort and W. Walters, Rochester, Minn.—p. 1142.
*Asymptomatic Common-Duct Stones. P. Klingenstein, New York.—p. 1146.
Value of Early Operation for Acute Cholecystitis. H. F. Graham, Brooklyn.—p. 1152.
Surgical Aspects of Gallbladder Disease. H. E. Santee, New York.—p. 1156.
Reconstruction of Common Bile Duct by End-to-End Anastomosis. E. Horgan, Washington, D. C.—p. 1162.
Partial and Subtotal Gastric Exclusion. W. F. Cunningham, New York.—p. 1167.
Duodenocutaneous Fistulas. J. V. Bohrer and A. Milici, New York.—p. 1174.
Intussusception in an Adult, Associated with Adenoma of Ileum. A. H. Iason and M. B. Filberbaum, Brooklyn.—p. 1191.
*Jejunal Alimentation: Experimental Study in Dogs. H. G. Scott and A. C. Ivy, Chicago.—p. 1197.
*Intravenous Urography. A. Randall, Philadelphia.—p. 1202.
Primary Carcinoma of Oviduct. W. O. Johnson and A. J. Miller, Louisville, Ky.—p. 1208.
*Carcinoma of Cervical Stump Following Subtotal Hysterectomy. C. H. Mayo and C. Mayo 2d, Rochester, Minn.—p. 1215.
*Treatment of Gas Gangrene. H. Milch, New York.—p. 1220.
Therapeutic and Physical Properties of Ultraviolet Irradiated Petrolatum. E. H. Eising, New York.—p. 1231.

Surgery of Blepharospasm.—Frazier describes a technic that he has found of value in the surgical treatment of four persons with blepharospasm. From his operative experiences, he is convinced that the number of nerve filaments to be cut may vary. The incision should be planned to expose both the anterior and the superior borders of the parotid gland. One limb of the rectangular incision must parallel the zygoma at its inferior margin; the other, at right angles, extends downward from the anterior limit of the horizontal limb. Thus a triangular flap is reflected, which exposes the desired field. Variations will be found in the boundaries of the parotid gland. Sometimes the gland spreads out over the zygoma. It is not always easy to identify the margins of the gland. The nerves to be divided lie between the superficial fascia and sheaths of the underlying muscles. So small are the nerve filaments that they can be exposed only by gentle and blunt dissection. Since one can identify the individual nerve filaments only by stimulation, it is better not to use a local anesthetic as this may negative the response of the nerve to stimulation. At least, in one of the series, the only one in which a local anesthetic was used, the responses were not so active as they were in the other cases. The initial incision may be made under nitrous oxide-oxygen anesthesia. To secure permanent results, the nerve should be cut and not, as has been suggested, injected with alcohol.

Asymptomatic Common Duct Stones.—Klingenstein believes that the conception of the symptomatology of choledocholithiasis must be reshaped to include a number of cases that do not answer to the classic description. He groups these under the heading of asymptomatic or latent common duct stones.

Jejunal Alimentation.—Scott and Ivy describe a method and a pabulum for jejunal alimentation in dogs which will maintain body weight for long periods. The constituents and method of preparing the pabulum are listed and described. The pabulum is nonirritating to the intestine and is readily assimilated. Food substances that are irritating to the intestine are pointed out. The pabulum is best tolerated when administered slowly, simulating the rate of gastric evacuation, which prevents distress from overdistention of the jejunum and peristaltic rushes from emptying the pabulum into the colon. The authors are convinced that the pabulum and method of administration will prove to be of definite clinical value on the basis of the fact that all the recommended food mixtures and methods of administration heretofore used clinically proved unsatisfactory for maintaining jejunostomy dogs.

Intravenous Urography.—Randall relates that pyelography by means of iopax is an entirely physiologic procedure and that it outlines the entire urinary tract devoid of artefacts, giving simultaneous functional reactions and permitting the study of the dynamics of a whole system. Good pictures are neither expected nor actually wanted, for one is reading renal function to be surgically interpreted and does not want, or need, artificial accentuation. As a visual portrayal of renal function, outstanding pictures indicate abnormalities, and this is especially true in ureterograms as characteristically observed in ureteral obstructions. Failure of excretion indicates lack of unilateral or bilateral function, and here the cystographic outline from the drug's elimination is the key to the renal activity. Problems of interpretation will naturally and constantly arise, but one will learn to overcome them and experience will eliminate them all in time. One should not hesitate to fall back on the more tried and understood methods of ureteral catheterization, differential function tests and instrumental pyelography, but the most important and most valuable adjunct of this method will be the establishment of a close cooperation between the roentgenologist on the physical side and the urologist on the clinical side and, unless this cooperation is sought for and forthcoming, there is danger that this method, so easy of administration and so difficult of interpretation, may lead to two unsuspected errors: one, that needless surgical operations will be undertaken on insufficient grounds; and, second, that early diagnosis and necessary surgical measures will be denied from inadequate interpretation.

Carcinoma of Cervical Stump Following Subtotal Hysterectomy.—C. H. Mayo and Charles Mayo 2d present further evidence as to the truth of the contention that even though a malignant condition is not present in the cervix at the time hysterectomy is performed, the likelihood of its development is ever present if the cervix is left intact. A review of the cases in their clinic reveals that between Jan. 1, 1910, and July 1, 1930, ninety-nine patients presented themselves with carcinoma of the cervical stump following subtotal hysterectomy. A consideration of these patients as a group disclosed certain interesting facts: Following hysterectomy performed at the clinic, cervical carcinoma developed in twelve cases in which the operation was performed for benign conditions and in three cases in which it was performed for questionably benign conditions. Following hysterectomy performed elsewhere, cervical carcinoma developed in twenty-three cases in which the operation was performed for benign conditions and in sixty-one cases in which it was performed for questionably benign conditions. The low incidence of carcinoma of the stump of the cervix in cases in which subtotal hysterectomy was done at the clinic may be attributed to the frequency with which, for many years, the technic of cupping or coning out the cervix from above has been employed, thus removing all of the cervical canal. Since it is the purpose of the surgeon to restore health and to insure, so far as he is able, the future health of his patient, it behooves

him to consider seriously the potentialities of the cervical stump when he is confronted with the problem of total versus subtotal hysterectomy. The authors believe that the difference in death rate between total abdominal hysterectomy and subtotal abdominal hysterectomy is slight, if any, and that the higher death rate usually attributed to total abdominal hysterectomy is probably due to the selection of graver surgical risks rather than to differences due to operative technic.

Treatment of Gas Gangrene.—Milch believes that, in the treatment of gas gangrene, radical surgery, even including amputation, and the liberal use of a polyvalent serum are the only dependable measures at hand. In the prevention of the disease the routine use of prophylactic serum should be advocated in all cases of street accidents as well as in the preoperative preparation of patients with certain conditions, as arterial disease and diabetes. Shock, acidosis and diabetes should be energetically combated. Local, spinal or gas anesthesia should be chosen in preference to ether or chloroform. The tourniquet should be forbidden even at the inconvenience of the surgeon.

Archives of Dermatology and Syphilology, Chicago

23: 1021-1206 (June) 1931

*Syphilis: Some Psychologic Aspects of Treatment. G. H. J. Pearson, Philadelphia.—p. 1021.
Study of Stimulating Effect of Small Doses of Thallium Acetate on Rate of Growth of Hair in Albino Rat. Zola K. Cooper and M. F. Engman, St. Louis.—p. 1031.
Hypersensitivity to Trichophytin in Casual Dermatologic Patient: One Hundred and Two Cases. I. Rosen, S. M. Peck and N. Sobel, New York.—p. 1041.
Remarkable Medicine Guaiacum and Cure of Gallic Disease. U. von Hutten, Translated by C. W. Mendell, New Haven, Conn.—p. 1045.
*Tolerance for Dextrose in Acne Vulgaris. S. S. Greenbaum, Philadelphia.—p. 1064.
*Treatment for Erysipeloid by Local Injections of Specific Serum: Case. E. B. Ritchie, Chicago.—p. 1069.
Epithelioma Secondary to Pellagrous Dermatitis. W. U. Rutledge and R. Kelly, Louisville, Ky.—p. 1072.
Morphologic Variation Within Same Species of Dermatophyte as Observed in Hanging-Drop Cultures. Dorothy Spring, Philadelphia.—p. 1076.
*Solitary Vascular Myoma of Skin: Case. A. B. Ragins, Chicago.—p. 1087.
*Isolation of Ringworm Fungi from Sweat. O. L. Levin and S. H. Silvers, New York.—p. 1094.

Syphilis.—Pearson believes that the syphilologist has two responsibilities of equal importance: first the adequate and proper treatment of the disease; second, the treatment of the syphilitic patient. One cannot be carried to a successful conclusion without the other. In order to accomplish both aims, the syphilologist must remember that he is dealing with a human being whose fears and anxieties bear a definite relationship to treatment. He must attempt to understand this human being and his total situation, endeavor to ascertain why he reacts as he does, and institute the treatment that will bring the maximum results. Only by understanding and viewing the total situation, the patient as well as the disease, can the physician attain the cooperation that he desires.

Tolerance for Dextrose in Acne Vulgaris.—Greenbaum found that in a control group of fifteen patients there were seven, or 47 per cent, with intolerance for dextrose. Of thirty-nine tolerance curves for dextrose made for as many patients with acne vulgaris, there were twenty-four, or 61 per cent, that indicated a varying degree of intolerance. Therefore if intolerance for dextrose is present in acne, it is not present either in all types of acne or even in all pustular types. If there is any connection between the intake of sugar and pustular acne or if intolerance for sugar is part of an endocrine imbalance generally believed to be present in acne, the test for dextrose tolerance does not appear to be of help in detecting it.

Erysipeloid.—Ritchie records a case of erysipeloid infection that arose from decomposing lake perch. The bacillus of swine erysipelas was isolated from deeply excised tissue. Treatment by local injection of *Erysipelothrix suis* serum was successful. The injection of *Erysipelothrix suis* serum administered locally proved advantageous, not only because of the small amount (8 cc.) required, but because there were no accompanying constitutional reactions, such as are frequently encountered when the serum is administered intragluteally.

Vascular Myoma.—Ragins describes a case of a solitary vascular myoma of the skin in which there were clinical manifestations of pain—which were paroxysmal or which were produced by emotional changes, by changes in temperature or by pressure—and a peculiar red discoloration of the skin with free mobility over the tumor. The pathologic manifestations of interlacing bundles of smooth muscle fibers showed derivations from the muscularis of the veins; areas also exhibited replacement of the proliferating media of the blood vessels by fibrillar connective tissue.

Ringworm Fungi.—In order to prove a relationship between hyperhidrosis and fungus infections of the feet, Levin and Silvers inoculated maltose-agar mediums with sweat obtained from the feet of eight patients. Cultures of apparently pathogenic fungi were obtained in five of eight cases. The fungi obtained are regarded as belonging to the Kaufmann-Wolf group. Bacteria, *Aspergillus niger,* and yeastlike organisms were also found. As a result of their observations, the authors expect that further similar studies will prove that fungi occur in the skin of the feet of the majority of persons. They believe that the sweat of the feet is a common, if not the most common, source of transmission of epidermophytosis.

Archives of Neurology and Psychiatry, Chicago

25: 1175-1406 (June) 1931

Innervation of Thyroid Gland: I. Presence of Ganglions in Thyroid of Dog. J. F. Nonidez, New York.—p. 1175.
Experimental Poliomyelitis: Histology of Persistent Lesions of Central Nervous System. Bettina Warburg, New York.—p. 1191.
Schilder's Disease: Case. G. K. Lauritzen and I. L. H. Lundholm, Stockholm, Sweden.—p. 1233.
Effects of Local Freezing of Central Nervous System of Cat. A. Schneider and B. Epstein, Rochester, N. Y.—p. 1263.
Equilibrium Between Cerebrospinal Fluid and Blood Plasma: I. Composition of Human Cerebrospinal Fluid and Blood Plasma. F. Fremont-Smith, Mary Elizabeth Dailey, H. H. Merritt, Margaret P. Carroll and G. W. Thomas, Boston.—p. 1271.
Id.: II. Composition of Human Cerebrospinal Fluid and Blood Plasma in Meningitis. F. Fremont-Smith, Mary E. Dailey, H. H. Merritt and Margaret P. Carroll.—p. 1290.
Nonelectrolytes: Their Distribution Between Blood and Cerebrospinal Fluid. J. R. Cockrill, San Francisco.—p. 1297.
Combined Action of Some Convulsant Agents in Small Doses and Action of Bromides in Experimentally Induced Convulsions. F. H. Pike, M. Osnato and J. Notkin, New York.—p. 1306.

California and Western Medicine, San Francisco

34: 393-472 (June) 1931

Nephritis and Nephrosis. E. T. Bell, Minneapolis.—p. 393.
Radiologist's Duty to His Specialty. C. M. Richards, San Jose.—p. 395.
*Tumors of Glioma Group: Their Histologic Diagnosis. C. B. Courville and L. J. Adelstein, Los Angeles.—p. 396.
*Agranulocytic Angina: Case. G. A. Gray, San Jose.—p. 402.
Arthritis. R. F. Atsatt, Santa Barbara.—p. 405.
Diocles of Carystos and His Letter to King Antigonus. Ethel Gladstone, San Francisco.—p. 409.

Tumors of Glioma Group.—Courville and Adelstein state that the common types of glioma are recognizable by routine staining methods. The interpretation of the observations by these methods has been gained by the use of specific metallic impregnations. An accurate pathologic diagnosis cannot be made from the gross appearance of the tumor alone, for several types resemble one another closely in color, texture and especially in their tendency to become cystic. It is important for the surgeon to know the nature of a lesion exposed at operation in order to treat it intelligently as well as to gain an insight into its prognosis. It is furthermore of academic interest to the pathologist to be able to recognize the nature of tumors discovered at necropsy. The essential points to study, microscopically, in a given case are the architectural arrangement of the tissue, the amount and distribution of fat and connective tissue, and the nuclear detail, including the type of cell division. These essentials are revealed by the routine methods used in any well organized pathologic laboratory.

Agranulocytic Angina.—Gray believes that, in addition to the ordinary symptomatic treatment and the combating of the toxemia in agranulocytosis, the most hopeful present form of therapy is leukocytic extract in adequately large doses, varying from 20 to 50 cc. in twenty-four hours, depending on the granulocytic system response during the acute toxic course of the disease, this to be followed, as soon as the blood picture is held in check, by high voltage roentgen therapy in one-twentieth skin unit doses over the long bones.

Canadian Medical Association Journal, Montreal

24: 763-902 (June) 1931

Study of Action of Irradiated Ergosterol and of Its Relationship to Parathyroid Function. N. B. Taylor, C. B. Weld, H. D. Branion and H. D. Kay, Toronto.—p. 763.
Primary Peritonitis: Pneumococcic and Streptococcic: Sixty-Seven Cases. J. H. Duncan, Sault Ste. Marie, Ont.—p. 778.
Laboratory Tests and General Practitioner in Diagnosis and Treatment of Nephritis. I. M. Rabinowitch, Montreal.—p. 785.
Chronic Chlorosis. J. D. Adamson and F. H. Smith, St. Boniface, Manit.—p. 793.
Intravenous Urography. N. E. Berry, Kingston.—p. 798.
Discussion on Fractures Involving Knee Joint: Fractures of Extensor Apparatus of Knee. R. W. Jones, Liverpool.—p. 803.
Common Causes of Earache. G. E. Tremble, Montreal.—p. 808.
Some Observations on Management of Surgical Goiter. T. H. Lennie, Vancouver.—p. 814.
Hyoscine (Scopolamine) Amnesia in Labor. A. Somerville, Eckville, Alta.—p. 818.
Posture in Children. R. H. Wiggins, Victoria, B. C.—p. 820.
Few Thoughts on Problem of Sickness Insurance from Country Doctor. S. English, Simcoe, Ont.—p. 826.
Late Sequelae of Encephalitis Lethargica and of Influenza. C. Hunter, Winnipeg.—p. 828.
Urinary Acidifiers and Alkalinizers. V. E. Henderson and J. M. Scott, Toronto.—p. 833.

Illinois Medical Journal, Oak Park

59: 409-488 (June) 1931

On Being Ourselves. W. D. Chapman, Silvis.—p. 423.
Symptoms of Acute Perforation of Peptic Ulcer. E. P. Coleman, Canton.—p. 427.
Treatment of Acute Gonorrheal Arthritis. D. F. Rudnick, Chicago, and H. J. Burstein, Decatur.—p. 430.
Sarcoma of Kidney: Two Cases in Adults. J. S. Grove, Chicago.—p. 433.
Spasm in Lower Third of Esophagus. E. W. Hagens, Chicago.—p. 437.
Safety Pin "Tongs" for Fingers, with Report of Case. E. B. Fowler, Chicago.—p. 438.
Prognosis and Differential Diagnosis of Nephritis in Children. C. A. Aldrich, Winnetka.—p. 439.
Recent Advances in Epidemiology of Intestinal Diseases. L. Arnold, Chicago.—p. 445.
Rôle of Viosterol in Pregnancy. G. C. Richardson, Chicago.—p. 453.
Rush Calls for Creation of Cooperative Clinics. J. K. Narat, Chicago.—p. 461.
Case Report of Acute Strangulated Meckel's Diverticulum by Fibrous Band with Gangrene. A. Neiman, Chicago.—p. 466.
Aschheim-Zondek Test as Aid in Diagnosis of Tubal Pregnancy. S. Klein, Chicago.—p. 467.
Insulin Reactions—Their Symptoms and Diagnostic Importance. E. F. Traut, Oak Park.—p. 468.
Nonsurgical Work in Industrial Medicine. H. W. Newman, Cincinnati.—p. 470.
Bacteriology and Management of Infections of Female Generative Tract. A. F. Lash, Chicago.—p. 473.
Case of Tetanus. L. Brannon, Joliet.—p. 476.

Indiana State Medical Assn. Journal, Fort Wayne

24: 307-358 (June) 1931

*Unusual Manifestations and Complications of Exophthalmic Goiter and of Adenomatous Goiter with Hyperthyroidism. H. F. Dunlap, Rochester, Minn.—p. 307.
Upper Respiratory Infection as Factor in Asthma. H. A. Van Osdol, Indianapolis.—p. 312.
End-Result Study of Joint Tuberculosis Conservatively Treated. R. A. Milliken, Indianapolis.—p. 314.
Trends in Modern Medicine. J. A. McDonald, Indianapolis.—p. 316.
Fusiform Spirochetal Infection as Cause for Bronchial Asthma and Other Allergic Conditions. H. M. Baker, Evansville.—p. 320.
Diet and the Preschool Age Child. H. B. Mettel, Indianapolis—p. 323.
Pediatric Case (Congenital Ectodermal Dysplasia). H. Call, Bloomington.—p. 324.
Medical Cases (1. Congenital Acrocongestion; 2. Erythromelalgia). E. G. Billings, Bloomington.—p. 326.
Pharmacologic and Clinical Study of Ephedrine. K. K. Chen, Bloomington.—p. 327.
Etiology of Renal Calculus. H. G. Hamer, Bloomington.—p. 328.
Obstetric Case (Anemia Developing During Pregnancy). D. L. Dewees, Bloomington.—p. 329.
Orthopedic Case (Acquired Torticollis, Following an Attack of Tonsillitis). W. V. Woods, Bloomington.—p. 330.
Orthopedic Case (Congenital Deformity of Lower Extremities; Bilateral Talipes Varus). O. F. Rogers, Jr., Bloomington.—p. 331.
Surgical Case (Partial Bowel Obstruction Complicated by Anemia). F. B. Ramsey, Bloomington.—p. 331.

Goiter.—Dunlap emphasizes the fact that the recognition of exophthalmic goiter or of adenomatous goiter with hyperthyroidism is at times difficult, especially in those cases in which the hyperthyroidism is manifested by bizarre symptoms or in which the usual clinical picture is masked by some associated disease. The symptoms of the associated disease frequently may be so exaggerated by the hyperthyroidism that the former appears to play a dominant rôle as a causative factor in the patient's illness. Frequently, however, alleviation of the hyperthyroidism by subtotal thyroidectomy will so ameliorate the severity of the coexistent disease as to restore to an active state of life a patient who otherwise would be an invalid. Certain symptoms, such as increased caloric intake, increased tolerance to cold, and certain clinical signs, such as pigmentary changes, trophic changes of the nails and various ocular manifestations, at times may furnish a clue leading to the establishment of a diagnosis of exophthalmic goiter or of adenomatous goiter with hyperthyroidism in otherwise obscure maladies. A therapeutic test with compound solution of iodine, with resultant clinical improvement and fall in basal metabolic rate, may at times be the deciding factor in establishing the diagnosis in obscure cases in which exophthalmic goiter is suspected.

Iowa State Medical Society Journal, Des Moines

21: 273-328 (June) 1931

Nervous Indigestion. A. A. Schultz, Fort Dodge.—p. 275.
Benign Polypi of Colon and Their Relation to Malignancy. H. E. Hullsiek, St. Paul.—p. 279.
Hematuria. R. B. Hullsiek, St. Paul.—p. 284.
*Discussion of Certain Features of Cardiac Therapy. F. M. Smith, Iowa City.—p. 287.
Acrodynia. A. F. Watts, Creston.—p. 291.
Severe Anemia of Pregnancy. T. A. Moran, Melrose.—p. 295.

Cardiac Therapy.—Smith believes that the cardiac disease of early life may be greatly reduced by the prompt elimination of foci of infection about the upper respiratory tract. After the onset of a rheumatic fever, which is indicative of a systemic invasion, the heart is likely to be damaged, and the chances of preventing a recurrence of the infection by the removal of foci are reduced. The importance of a prolonged period of rest, the employment of measures to improve the general health, and the later elimination of foci of infection not only afford the maximum protection to the heart but provide the most satisfactory means of promoting recovery from the disease. In general, the importance of the extended period of rest, regardless of whether or not there is cardiac damage, is not sufficiently appreciated. During the period of chronic valvular heart disease, the individual should be protected against recurring infections that are chiefly responsible for the progression of the cardiac disability. The formula, briefly outlined, for the treatment of cardiac failure is simple and has proved to be effective. Absolute rest in bed, sleep, and relaxation are essential to the restoration of the cardiac function in the advanced forms of cardiac failure. Other possible means of reducing the load on the heart, as the removal of fluid from the peritoneal and pleural cavities, venesection and the administration of nitrites when there is an associated hypertension, should always be considered. The importance of the diet has been demonstrated. The administration of large doses of digitalis is not believed to be necessary. When the tincture is employed it should be prescribed in minims. The theophylline preparations are particularly effective in the arteriosclerotic form of cardiac failure.

Johns Hopkins Hospital Bulletin, Baltimore

48: 353-395 (June) 1931

*Treatment of Hemicrania (Migraine) by Removal of Inferior Cervical and First Thoracic Sympathetic Ganglion. W. E. Dandy, Baltimore.—p. 357.
*Effect of Injection of Urine from Pregnant Mammals on Ovulation in Rabbit. F. F. Snyder and G. B. Wislocki, Baltimore.—p. 362.
Human Tubal Egg, Unfertilized. W. H. Lewis, Baltimore.—p. 368.
*Mechanism of Ketogenic Diet in Epilepsy. E. M. Bridge and L. V. Iob, Baltimore.—p. 373.
Biologic Studies of Acid-Fast Organism. S. A. Petroff and W. Steenken, Jr., Trudeau, N. Y.—p. 390.

Treatment of Hemicrania.—Dandy reports two cases of migraine in which he removed the inferior cervical and first thoracic sympathetic ganglions. The removal of the superior cervical ganglion in the second case did not have an effect on the patient's attacks, but the attacks stopped instantly on removal of the entire sympathetic supply to that side. In the light of his first experience, in which the removal of the stellate ganglion had completely removed not only the pain of similar type but also the objective evidence of function of the sympathetic fibers, the author believes that sympathetic fibers must enter the cranial chambers either along the sheath of the verte-

bral or carotid artery or probably of both, or perhaps by fibers that pass into and up the spinal cord. The time that has elapsed since the operation in these cases (from two and one-half to six and one-half months) is too short to permit an unreserved opinion concerning the absolute value of the procedure; nevertheless, the results have been striking and absolute in frequently recurring attacks.

Effect of Injection of Urine on Ovulation.—Snyder and Wislocki describe experiments in which they demonstrated that the urines of pregnancy of various animals (macaque monkeys, rabbits, rats, cats and dogs) do not produce ovulation in mature, healthy, isolated rabbits. The ovulation test in the rabbit does not completely parallel the similar mouse test as reported in the literature. Of the two tests available for the diagnosis of pregnancy, the ovulation test in the rabbit appears to be more specific than the mouse test.

Mechanism of Ketogenic Diet in Epilepsy.—Bridge and Iob present evidence showing that neither the ketosis nor the acidosis accompanying the so-called ketogenic treatments for epilepsy can be considered the sole beneficial factor of such regimens. Experiments are reported showing that, if the high fat diet has succeeded in removing a surplus of extracellular fluid from the body, improvement in seizures is associated; if the diet has not removed this fluid, it has not affected the course of the disease. Since a simple acidosis and a sodium-free diet also tend to produce similar losses of fluid from the body, fasting may be considered a triple mechanism—high fat diet, sodium-free diet, and acidosis—for the removal of extracellular fluid, while the ketogenic diet has only two factors—high fat diet and acidosis. Since a ketogenic diet cannot be considered a failure until it has failed to maintain the good effects of fasting, it is believed that the institution of the high fat diet should always be preceded by a minimum of five days of complete starvation, water only being allowed. Although the data presented were obtained from children with petit mal epilepsy, there is no apparent reason to suppose that they do not apply to children with major convulsions as well.

Journal of Infectious Diseases, Chicago

48: 511-597 (June) 1931

*Dissociation of Hemolytic Streptococci from Erysipelas, Scarlet Fever and Septic Sore Throat. Ruth Tunnicliff, Chicago.—p. 511.

*Infection in Epidemiology of Undulant Fever in General Population and in Selected Groups in Iowa. C. F. Jordan, Iowa City.—p. 526.

Fecal Flora of Adults, with Particular Attention to Individual Differences and Their Relationship to Effects of Various Diets: 1. Individual Differences on Normal Diet. Agnes G. Sanborn, Boston.—p. 541.

Local Skin Reactivity to "Filtrates" of Pneumococcus. Elizabeth J. Cope and Katherine M. Howell, Chicago.—p. 570.

*Complement-Fixation and Agglutination Tests in Brucella Abortus Infection. K. T. Sasano, D. Caldwell and E. M. Medlar, Mount McGregor, N. Y.—p. 576.

Serologic Study of Sixteen Strains of Bacillus Hemolyticus. L. R. Vawter and E. Records, Reno, Nev.—p. 581.

*Simultaneous Multiple Immunization. L. Hektoen and A. K. Boor, Chicago.—p. 588.

Hemolytic Streptococci.—According to Tunnicliff, many strains of hemolytic streptococci from erysipelas, scarlet fever and septic sore throat remain stable for years, both immunologically and culturally. A few strains dissociate, and the cocci from the dissociated colonies differ from those in the original culture in colony formation, immunity reaction, sometimes in production of color on chocolate agar and in virulence. Many of the dissociated cultures may be reverted to the original type of streptococcus.

Epidemiology of Undulant Fever.—Since nearly 80 per cent of a group of the general population studied by Jordan was shown not to have contact with livestock, it is assumed that their agglutinins for *Brucella* are largely due to their use of raw dairy products. Veterinarians show agglutinins for *Brucella* in definitely higher ratio than does the general population, owing chiefly to their contact with cattle, but the titers do not tend to reach high dilutions, ordinarily indicative of active infection, owing possibly to an acquired immunity. Infection with *Brucella melitensis* and manifest disease due to contact are in direct proportion to exposure; this is seen in workers in packing houses, who exemplify direct contact with swine. Infection with *Brucella melitensis* and disease due to the ingestion of raw dairy products from infected animals seem to be largely dependent on the amount consumed, the duration of exposure and the number of organisms ingested.

Brucella Abortus Infection.—In the examination of serums from 1,000 persons, Sasano and his collaborators noted a positive complement fixation for *Brucella abortus* in ninety-six and a positive agglutination in seventy-eight. In only five cases was the diagnosis of undulant fever made. In each of these five cases, complement fixation was positive and agglutination was present in titers of from 1:135 to 1:1,200 at some time during the illness. Experiments on rabbits showed that the complement fixing substances and the agglutinins develop at about the same time, and that the complement fixing substances persist longer than the agglutinins. Complement fixation and agglutination may be obtained from months to years after apparent recovery from the infection. Because of this the diagnosis of undulant fever should not be made on the basis of a positive complement fixation or on that of serums producing an agglutination in dilutions of 1:15 or 1:45, in the absence of a positive blood culture.

Simultaneous Multiple Immunization.—Hektoen and Boor state that, heretofore, simultaneous multiple immunization has been studied under highly complex conditions. In order to study the effects of multiple immunization under as simple conditions as possible, they used mixtures of single antigens in as pure a form as possible. The mixtures, with occasional exceptions, consisted of equal amounts of 1 per cent solutions of the antigens. Rabbits were given five or six intravenous injections of such mixtures in increasing quantities, at intervals of three or four days. Toward the end of the series of injections, many rabbits died unexpectedly, especially when given comparatively large amounts of the antigenic mixture. The survivors, which were bled on the fourth day after the last injection, gave serum rich in many precipitins. The antigenic mixture in one experiment contained fourteen antigens, and at least in one rabbit precipitins developed for all the antigens save one. In another experiment the mixture contained thirty-five antigens, and again in at least one animal precipitins were demonstrated for all save one.

Journal of Lab. & Clinical Medicine, St. Louis

16: 843-942 (June) 1931

Decreased Absorption from Alimentary Tract Following Injection of Posterior Pituitary Extract. C. H. Thienes, Los Angeles, and A. J. Hockett, Portland, Ore.—p. 843.

Assay of Tinctures of Digitalis: Cross-Section Survey of Metropolitan Boston. F. P. Chillingworth, F. E. Haskins and Gertrude U. Casey, Boston.—p. 850.

Treatment of Secondary Anemia, Especially with Various Preparations of Iron. K. C. Smithburn, J. M. Masters and L. G. Zerfas, Indianapolis.—p. 858.

Sodium Dehydrocholate: Its Specific Effect on Pneumococci, II. E. E. Ziegler, Northport, N. Y.—p. 868.

Vital Function Studies: VIII. Weight Calculation in Pregnancy. A. W. Rowe, Boston.—p. 874.

Studies on Anesthesia: II. Certain Effects of Low Oxygen Concentrations. R. S. Hunt, Boston.—p. 881.

Medical Journal and Record, New York

133: 573-624 (June 17) 1931

Treatment of Cancer of Lip. D. W. Montgomery and G. D. Culver, San Francisco.—p. 573.

Common Errors in Diagnosis of Rectal Diseases. F. C. Smith Philadelphia.—p. 575.

Shaping the Personality of Individual. I. S. Wile, New York.—p. 576.

Chronic Appendicitis Roentgenologically Considered. L. J. Gelber, Newark, N. J.—p. 580.

Erythromelalgia Consequent to Hemiplegia: Case. A. P. Smith, Tuskegee, Ala.—p. 581.

Vitamins in Commerce. Ethel Browning, London.—p. 585.

Modern Conception of Deafness. H. Hays, New York.—p. 587.

Behavior of White Blood Cells in Polycythemia Vera. E. S. Cross, Baltimore.—p. 591.

Pernicious Anemia. A. I. Rubenstone, Philadelphia.—p. 594.

Nervous and Mental Complications of Pernicious Anemia and Effect of Liver Therapy on Them. M. Keschner, New York.—p. 598.

Pernicious Anemia. S. Gorsky, Philadelphia.—p. 601.

Acute Thrombocytopenic Purpura Hemorrhagica and Its Treatment. A. P. Vastola, Waterbury, Conn.—p. 603.

Instruments and Technical Methods: Optic Diaphragm for Relief of Diverse Visual Disturbances, More Especially Those Associated with Glare or Dazzle. H. B. Sheffield, New York.—p. 607.

Slip Joint Principle Applied to Surgical Instruments. S. K. Levy, Brooklyn.—p. 608.

Tragedy of Dr. Lopez, Chief Physician to Queen Elizabeth. M. W. Brown, New York.—p. 609.

New England Journal of Medicine, Boston

204: 1279-1334 (June 18) 1931

Method of Two Stage Abdominosacral Removal of Cancer of Rectum. F. H. Lahey, Boston.—p. 1279.
Recent Trends in Anesthesia. S. C. Wiggin, Boston.—p. 1283.
Respiratory Complications in Relation to Administration of Anesthetics. F. Allen, Boston.—p. 1288.
Thrombophlebitis in Varicose Veins. E. E. O'Neil, Boston.—p. 1293.
Certain Aspects of Problem of Tuberculosis in Commonwealth of Massachusetts. F. T. Lord, Boston.—p. 1296.
Annual Report of Executive Secretary. F. Kiernan, Boston.—p. 1297.
Annual Report of Educational Secretary. Jean V. Latimer, Boston. —p. 1300.
Newer Aspects of Antituberculosis Work. I. Galdston, New York. —p. 1303.
Recent Advances in Neurologic Surgery. T. J. Putnam, Boston. —p. 1308.

New York State Journal of Medicine, New York

31: 737-800 (June 15) 1931

Medical Responsibilities. W. H. Ross, Brentwood.—p. 737.
Are the Widespread Criticisms of the Medical Profession Justified? W. G. Morgan, Washington, D. C.—p. 739.
Better Practicing Doctors. W. D. Johnson, Batavia.—p. 744.
Early Treatment of Cross-Eyed Child. E. K. Hallock, Freeport. —p. 745.
Abscess of Pregnant Uterus; Rupture During Labor. R. L. Wood, Brooklyn.—p. 747.
Present Status of Diagnosis and Treatment of Cancer. W. P. Healy, New York.—p. 748.
Relation of Digestive Anomalies to Digestive Neuroses. J. L. Kantor, New York.—p. 751.
Medicine and Present Social Trend. N. K. Benton, New York. —p. 755.
Determination of Blood Clotting Function. I. N. Kugelmass, New York.—p. 759.
Five Years After: Résumé of Remote Effects of Treatment of Hay-Fever and Asthma with High Frequency Electricity. W. G. Lewi, New York.—p. 762.
Pupillary Reactions in Health and in Diseases Other Than Ocular. W. H. Holzapfel, New York.—p. 765.

Northwest Medicine, Seattle

30: 249-298 (June) 1931

*Achlorhydria: Practical Consideration of Its Clinical Significance. G. B. Eusterman, Rochester, Minn.—p. 249.
*Heart Beat and Respiration in Total Novocain Analgesia. G. R. Vehrs, Salem, Ore.—p. 256.
Physical Examination of Aviators, Including Notes on Psychiatry and Personality Tests. H. V. Wurdemann, Seattle.—p. 261.
Eye Examination and Schneider Index of Aviation Candidates. E. D. Warren, Seattle.—p. 264.
Food Allergies in Children. Helen G. Dennis and C. U. Moore, Portland, Ore.—p. 267.
Fractures of Pelvis. E. O. Jones and H. T. Buckner, Seattle.—p. 269.
*Intravenous Urography by Use of Uroselectan Versus Retrograde Pyelography. C. J. Johannesson, Walla Walla.—p. 274.
Vulvovaginitis Pruritic Trichomonalis. J. H. Sayer, Seattle.—p. 278.
Fear Neurosis. J. A. Gilbert, Portland, Ore.—p. 280.
Diathermic Treatment of Gonorrheal Endocervicitis: Eighteen Cases. C. D. Donahue, Eugene, Ore.—p. 282.
Surgical Progress in 1930. R. D. Forbes, Seattle.—p. 286.

Achlorhydria.—Eusterman states that, with the possible exception of the group of cases that simulate ulcer, there is no proof that symptoms referable to the stomach proper are due to achlorhydria by itself. Of course, the lack of acid may give rise to diarrhea, anemia and changes in the spinal cord. As in chronic alcoholism, such symptoms as cardialgia, eructation and vomiting and the production of mucus may be due to gastritis. In the absence of gastritis, the majority of symptoms are of neurogenic nature. In treatment, all recent workers have emphasized the importance of adequate amounts of dilute hydrochloric acid. The fact that symptomatic relief does not always accompany the treatment, even with the induction of apparently adequate acidity, is not necessarily a contraindication to the continued use of the acid, since its digestive, antiseptic and other influences may still be effective. The value of treatment can be determined by periodic investigation with the tube and test meal or with histamine, whether free acid has been actually produced during digestion or whether there is any indication of reactivation of the secretory mechanism by spontaneous production of free acid. This treatment should necessarily be supplemented by such general measures as adequate rest, diet and whatever other measures seem indicated. This form of treatment may be replaced by the superior, although more expensive, desiccated hog stomach.

Procaine Hydrochloride Analgesia.—Vehrs believes that the vital motor centers are more resistant to procaine hydrochloride than are the sensory centers. The vital motor centers can function under proper doses of procaine delivered to the medulla. Paralysis of the respiratory centers by large doses of procaine brings about death by respiratory failure. The actual dose of procaine in the medulla which will cause alarming symptoms is more than 1 per cent. The Trendelenburg position is necessary in pure procaine analgesia in order that the blood will flow by gravity to the heart and permit the automatic heart action to pump that blood to the lungs and brain stem.

Intravenous Urography.—Johannesson has found that the intravenous injection of iopax is of considerable value in the study and diagnosis of a great many urologic conditions. With it one can visualize the following: (1) the extent and character of dilatation in the renal pelvis and calices, as well as in the ureter, (2) the deformity accompanying renal infections and tumors and (3) congenital anomalies. Through the roentgen appearance, it permits the elaboration of new methods for the estimation of the functional disturbances of the urinary system. In closing, the author emphasizes that, although in many cases the use of intravenous injection of iopax may render cystoscopic examination unnecessary, nevertheless its interpretation should often be accompanied by cystoscopic data before a complete or final diagnosis is made. Furthermore, the intravenous method should always precede instrumental pyelography.

Occupational Therapy and Rehabilitation, Baltimore

10: 135-206 (June) 1931

Neuropsychiatric Service in General Hospitals with Especial Reference to Occupational Therapy. I. Kimbell, Alexandria, La.—p. 135.
Occupational Therapy from Patient's Point of View. L. B. Crane. —p. 145.
Occupational Therapy and Sheltered Workshop Sponsored by Junior League of St. Louis. Mrs. L. Gratiot, St. Louis.—p. 151.
Occupational Therapy and Junior League. Winifred M. Smith, Portland, Maine.—p. 161.
Occupational Therapy and Vocational Training in Sanatorium and Their Relation to After-Care; Outsider's Viewpoint. R. R. Rosell, Chicago.—p. 169.
Occupational Therapy and Vocational Training in Sanatorium and Their Relation to After-Care; Insider's Viewpoint. Mary L. Rowe, Oak Terrace, Minnesota.—p. 175.
Importance of Lighting in Occupational Therapy. Mary Stoy Vaughan. —p. 179.

Ohio State Medical Journal, Columbus

27: 433-528 (June) 1931

Individual, Cooperative and Group Medicine. D. C. Houser, Urbana. —p. 457.
Appendicitis in Children Under Thirteen Years of Age. R. M. Watkins, Cleveland.—p. 461.
Undulant Fever in Ohio. L. F. Ey and F. Van Orsdall, Columbus. —p. 466.

Philippine Journal of Science, Manila

45: 119-318 (June) 1931

Water Supply of Manila from Underground Sources. L. A. Faustino. —p. 119.
Artesian-Well Waters in Manila and Neighboring Municipalities. R. H. Aguilar and L. Ocampo.—p. 151.
Relative Radioactivity of Deep-Well Waters in Manila and Vicinity. R. H. Aguilar.—p. 183.
Bacteriologic Survey of Artesian Wells in Manila and Vicinity. O. Schöbl and T. V. Rosario-Ramirez.—p. 201.
Spleen Survey of Eastern Shore of Bataan Province, Luzon. R. L. Holt and P. F. Russell.—p. 211.
Further Experiments Concerning Immunity in Treponematous Infections. O. Schöbl.—p. 221.
Philippine Turpentine from Pinus Insularis (Endlicher). Irene de Santos, A. P. West and J. Fontanoza.—p. 233.
Malaria Transmission in the Philippines: 1. Natural Vector. C. Manalang.—p. 241.
Ether-Insoluble Lead Salt of Lumbang Oil. D. M. Birosel.—p. 251.
New or Little Known Tipulidae from the Philippines (Diptera): VIII. C. P. Alexander.—p. 263.
Studies on Infantile Beriberi Based on Five Hundred and Fourteen Cases. J. Albert.—p. 297.

Public Health Reports, Washington, D. C.

46: 1353-1400 (June 5) 1931

Résumé of Report on Sanitation and Yellow Fever Control in Liberia. H. F. Smith.—p. 1353.
Venereal Disease Among Coast Guard Enlisted Personnel During Fiscal Year 1930. W. W. King.—p. 1360.

Southwestern Medicine, Phoenix

15: 189-242 (May) 1931

What are You Worth? H. A. Reese, Yuma, Ariz.—p. 189.
Pyelectasis (Hydronephrosis) and Ureterectasis: Causes and Treatment. W. M. Spitzer, Denver.—p. 191.
Treatment of Burns. J. L. Green, Jr., El Paso, Texas.—p. 194.
Focal Infections and Systemic Diseases. R. F. Thompson, El Paso, Texas.—p. 198.
Granuloma Inguinale. R. W. Mendelson, Albuquerque, N. M.—p. 201.
Meeting of American College of Physicians, Baltimore—March 23-27. M. K. Wylder, Albuquerque, N. M.—p. 203.
Unusual Case of Pulmonary Disease. F. G. Holmes, Phoenix, Ariz. —p. 207.
Case of Abdominal Tumor (Diagnostic Discussion). J. D. Hamer, Phoenix.—p. 208.
Compound Fracture with Gas Bacillus Infection: Recovery. A. C. Kingsley, Phoenix.—p. 211.
Discussion of Case and Use of Steinmann Nail in Fractures. J. M. Greer, Phoenix.—p. 211.
Report of Deaths in Good Samaritan Hospital (Phoenix) for January, 1931. J. D. Hamer, Phoenix.—p. 212.
Case of Pelvic Tuberculosis with General Extensions. R. J. Stroud, Tempe, Ariz.—p. 213.

Surgery, Gynecology and Obstetrics, Chicago

52: 1051-1198 (June) 1931

*Hyperplasia of Endometrium and Hormones of Anterior Hypophysis and Ovaries. C. F. Fluhmann, San Francisco.—p. 1051.
*Interrelationship of Pituitary to Endocrine System with Remarks on Treatment of Pituitary Disorders: Three Hundred and Thirty-Four Cases. C. H. Frazier, Philadelphia.—p. 1069.
*Pathogenesis of Acute Dilatation of Stomach. L. R. Dragstedt, M. L. Montgomery, J. C. Ellis and W. B. Matthews, Chicago.—p. 1075.
*So-Called Female Prostate and Concretion Formation in Female Urethra. M. J. Renner, New York.—p. 1087.
*Nonspecific Peritoneal Immunization. H. B. Morton, Rochester, Minn. —p. 1093.
Surgical Treatment of Duodenal Ulcer. H. Finsterer, Vienna, and F. Cunha, San Francisco.—p. 1099.
Diagnosis and Treatment of Acute Intestinal Obstruction. J. Mendonca, Rio de Janeiro, Brazil.—p. 1115.
*Treatment of Pelvic Cellulitis: Surgical Drainage of Parametric Exudates. Marion Douglass and D. Sheldon, Cleveland.—p. 1121.
*Aneurysm of Pulmonary Artery. H. R. Wahl and R. L. Gard, Kansas City, Kan.—p. 1129.
*Polypi of Large Intestine. G. Fitzgibbon and F. W. Rankin, Rochester, Minn.—p. 1136.
*Secondary Plastic Repair of Common Duct: New Aid in Finding Proximal Stump. L. Jacques, Chicago.—p. 1151.
Temporary Paralysis of Recurrent Laryngeal Nerves Following Thyroidectomy. E. I. Greene, Chicago.—p. 1153.
Pyo-Ureter. H. S. Jeck, New York.—p. 1158.
*Varicose Ulcers: Treatment with "Rubber Sponge or Venous Heart" and Supportive Bandage. H. D. McPheeters and C. E. Merkert, Minneapolis.—p. 1164.

Hyperplasia of Endometrium.—Fluhmann believes that hyperplasia endometrii should not be considered as a purely local change but as part of a definite clinicopathologic entity. It was found in 2.8 per cent of 1,700 hospital admissions in a gynecologic service and accounted for 12.2 per cent of patients in a series of 507 women with abnormal uterine hemorrhage. It may occur at any time during the active sexual life of women and has been observed in the postclimacteric period, but the majority of cases are found just before and during the menopause. Approximately 75 per cent of the patients were multiparas. The principal symptom of the disease is uterine hemorrhage, which is manifested mainly in two ways: (1) periods of profuse bleeding occurring at cyclic intervals, and (2) prolonged, continuous or intermittent hemorrhages. No relation between hyperplasia endometrii and systemic disease was established, but in about 30 per cent of the cases there was an associated pelvic condition. The endometrium is characterized by a marked hyperplasia of both glands and stroma. There is an absence of the corresponding cyclic changes of menstruation and a disorderly arrangement of the glands, of which three main types are seen: (1) glands lined by a single layer of cylindric epithelium, (2) cystic glands with a low cuboidal epithelium, and (3) glands with a stratification of the cylindric epithelium. In specimens obtained at the time a patient is bleeding may be seen, in addition areas of necrosis, thrombosis of blood vessels, and infiltration with leukocytes and lymphocytes. Epidermidalization is occasionally noted and may give rise to confusion with carcinomatous changes. A coexistence with carcinoma has been described. The ovaries of patients with hyperplasia endometrii characteristically show the presence of cystic ripening follicles, atretic follicles and theca lutein cysts, and there is an absence of mature corpora lutea. A number of cases with ovarian new growths have previously been described and one additional instance of granulosa cell carcinoma is reported. Functional studies have demonstrated an excessive production of estrin during the course of this disease, and the name "hyperestrinism" is suggested to describe the condition. In only one case out of ten was it possible to find large amounts of the anterior pituitary sex hormone in the blood. Evidence is advanced suggesting that hyperplasia endometrii is the direct result of an overstimulation of the endometrium by estrin and the complete absence of progestin influence. The chief local factor producing hemorrhage is the occurrence of areas of tissue disintegration. Two possibilities regarding the induction of necrosis in the endometrium are discussed: (1) a sudden cessation of estrin production, such as would occur consequent to the death of the ovum and atrophy of the follicle, and (2) a prolonged excessive estrin stimulation, such as would result from the persistence of cystic ripe follicles. The etiology of this disease is as yet obscure but it is evidently the result of an endocrine disorder rather than a local pelvic condition. The possible involvement of the anterior hypophysis is considered. The use of repeated curettages in younger patients and intra-uterine radium applications for women of the menopausal age are recommended as the most astisfactory methods of treatment evolved to date.

Interrelationship of Pituitary to Endocrine System.—In reviewing the notes of 334 cases of pituitary lesions in the human subject, Frazier was impressed with the extraordinary variations in the clinical expression of the disordered gland. He doubts whether any gland or organ of the body presents so many problems for study and observation and from so many angles. It is not surprising, because of the many ways in which the hormones of the pituitary body influence the function of other glands and vice versa, that the clinical syndromes are so varied and the problems involved offer so many avenues of approach and interest. Perhaps the most intimate relationship and the most constant is with the thyroid. Thyroid deficiency causes a consistent hypertrophy of the hypophysis in the male though not in the female. The size and the activity of the pituitary is specifically related to the activity of the thyroid, when this exceeds the usual limits in either direction, although its growth response to thyroid deficiency does not parallel the body as a whole. It has been said that the anterior lobe is the specific agent that stimulates the thyroid. Partial extirpation of the thyroid and suprarenals in the parents will be followed by an increase in the pituitary to two or three times its normal size in the offspring. Definite and constant as the relationship between thyroid and pituitary has been proved in lower forms of life, in the various dysfunctions of the pituitary gland in human beings one seldom finds evidence of thyroid involvement. Many observations have been made on the effect of removal of the parathyroids, but the results are not nearly so constant as after thyroidectomy. Certainly there is no specific growth relation between the parathyroid and the pituitary structures. From the clinical point of view, one would expect evidence of interreaction between the pituitary and the gonads. The author has constantly observed that in the female one of the earliest symptoms of pituitary disorder, antedating by many years any other suspicious evidence, is amenorrhea. Impotence in the male, while not infrequent, usually appears as a later symptom and is not observed until a diagnosis may be established by other symptoms of longer duration. In the treatment of pituitary disorders there are definite and distinct indications for the methods used; namely, glandular feeding for pituitary dysfunction, without pressure phenomena; irradiation for primary pituitary lesions, particularly adenomas, with evidence of early pressure signs but without signs of advanced optic atrophy; and, finally, operative intervention when vision is threatened or headache intolerable. The operative risk is 5 per cent. The measure of relief so far as concerns vision depends altogether and entirely on the presence and the degree of optic atrophy. Field distortions can be completely abolished and vision wholly restored, if the operation is not delayed, as is so often the case, until atrophy of the optic nerves, one or both, is established. The transfrontal method of approach is now accepted and approved and may be resorted to with reasonable assurance of success whenever the operation is not untimely.

Pathogenesis of Acute Dilatation of Stomach.—Dragstedt and his collaborators present evidence that offers a new interpretation of the cause of death in acute dilatation of the stomach. The dilatation is held to be caused by reflex inhibition of the peripheral gastric motor mechanism through efferent impulses reaching the stomach by way of the vagi and splanchnics. Experimental evidence is adequate to show that the stimulation of either visceral or somatic sensory nerves may produce such reflex gastric inhibition. The dilatation of the atonic stomach is produced by swallowed air and the accumulating secretions of the stomach and duodenum. The fluid is made up of gastric and pancreatic juice, bile and the secretions of the upper duodenal mucosa. From some recent observations on the normal volume of the digestive secretions in the dog, which indicate that previous estimates have been far too low, even the large amounts found in acute dilatation of the stomach do not seem excessive or the result of abnormal secretion. The cause of death is the failure of reabsorption of gastric and pancreatic juices and more particularly of the inorganic elements sodium and chlorine excreted in these fluids. The failure of reabsorption in turn depends on the inability of the atonic stomach and duodenum to propel these secretions into the lower intestine, where their absorption can take place. The gastric and duodenal mucosa does not absorb these digestive juices. In certain cases a secondary mesenteric obstruction to the inferior horizontal portion of the duodenum occurs and provides a further obstacle to the passage of the secretions into the lower bowel. In a clinical case reported the patient developed a hypochloremia alkalosis, and dehydration exactly as occurs in the experimental animal when the gastric juice secreted is not allowed to be again absorbed. It is probable that the occasional symptoms of tetany observed in cases of acute dilatation of the stomach are caused by chemical changes in the blood as a result of the failure of reabsorption of gastric juice.

So-Called Female Prostate and Concretion Formation in Female Urethra.—Renner calls attention to the fact that the female urethra shows much resemblance to the male urethra, especially in its relationship with accessory glands, genital apparatus and Cowper's glandulae bulbo-urethrales. The unilocular cysts and Skene's ducts are to be considered as para-urethral glands. Acinous formations are of prostatic origin, especially when they are embedded in the smooth musculature. Corresponding to the colliculus seminalis, a submucous cyst is to be found in the female urethra surrounded by prostatic glands, so that the prostatic utriculus can be seen in rudimentary form. The concretions that are eventually found in the prostatic glands correspond morphologically and in their consistency absolutely to the male prostatic concretions. The physiologic and anatomicopathologic observations mentioned are of an importance for the application of urology which should not be underestimated, as concretion formation in the urethral muscularis mucosae may cause severe complications, such as ulcers, phlegmons or strictures.

Nonspecific Peritoneal Immunization.—Morton describes experiments in which he demonstrated that local peritoneal immunity against the hemolytic streptococcus can be produced in rabbits by repeated intraperitoneal injection of various nonspecific substances. A test inoculation of sufficient dosage to kill 100 per cent of the control animals was given in all experiments. The percentage of recoveries among the test animals varied proportionately with the period of immunization. Immunity was adequately established in a large percentage of the animals about sixty hours after the initial injection and immunity was proved in 100 per cent after several days. A microscopic study of peritoneal fluid and omental tissue indicates that this immunity is dependent on, or is associated with, the presence of macrophages.

Treatment of Pelvic Cellulitis.—The clinical course of patients operated on for parametric exudates, even during the period of firm infiltration, has led Douglass and Sheldon to believe that the extraperitoneal placing of drains away from exudates in this region shortens the convalescence and definitely lessens the morbidity when compared with patients treated expectantly by position, rest and heat. These patients are infinitely more comfortable after incision and the placement of a drain down to the base of the broad ligament even though only a small amount of fluid or pus is evacuated at the time of incision. The defervescence following incision occurs by a gradual decline through the course of a number of days or occurs abruptly, sometimes several days after incision. The immediate effect of the drainage may be a transient exacerbation of the febrile reaction of the patient, as is frequently true following any operative procedure in a region of inflammation. The authors' patients have been followed since operation and the postoperative condition of all is satisfactory.

Aneurysm of Pulmonary Artery.—Wahl and Gard report a typical case of aneurysm of the pulmonary artery in a young woman. It was opened by mistake, having been considered a solid mediastinal mass, and resulted in fatal hemorrhage. A brief summary is given also of fourteen new cases confirmed by necropsy to be added to those described by Henschen in 1905 and Posselt in 1911, making a total of seventy cases in the literature. These aneurysms are usually associated with some congenital anomaly of the heart and often have a syphilitic base. They have been reported most frequently in relatively early adult life. Their occurrence is sufficiently frequent to emphasize their consideration in the diagnosis of mediastinal masses.

Polypi of Large Intestine.—Fitzgibbon and Rankin present the results of a microscopic study of thirteen cases of polyposis of the colon. Two of the cases were instances of generalized involvement of the lower part of the bowel and should be added to the 127 other reports in the literature of this uncommon form of extensive proliferative disease of the large intestine. From their observations the authors conclude that characteristic structural variations in polypi of the large intestine serve as readily recognizable criteria for the classification of the growths into three major groups, each of which not only presents pathologic unity but also and more importantly follows a definite predictable clinical course. Of the three groups, group 1 alone is entitled to the benign implications remaining in the name polyp; group 2 tends inevitably in time to malignant change, and group 3 is an immediate precancerous formation. The three-phase plan of classification is a convenient refinement in pathologic descriptive practice and a useful clinical guide to operation and prognosis. The site of origin of twenty-two of twenty-four carcinomas observed in the thirteen cases was traced back through unbroken lines to polypi. The genealogical evidence for these growths argue persuasively for the extremely plausible contention that the histogenesis of carcinoma of the colon is mediated through precancerous polypus formations and not otherwise.

Secondary Plastic Repair of Common Duct.—Jacques states that the exposure of injured bile ducts is frequently more difficult than their plastic repair. Indigo carmine, injected in adequate amounts intravenously, is excreted in the bile, stains it bluish green, and may aid in guiding the way to the proximal stump. A similar procedure may be of value in detecting leakages of bile before closure of the abdomen following cholecystectomy and common duct operations.

Varicose Ulcers.—In their use of the rubber sponge, McPheeters and Merkert go a step further than Nobl, who first applied it in the treatment of varicose ulcers. Mere compression will aid in forcing the blood serum and lymph from the tissues and at the same time compress the coarse hydropic granulations that overgrow and literally smother and choke out the normal epithelial cells that attempt to spread over the ulcerations. Compression, however, is not enough. One more measure is necessary to get the best results. After the sponge is bound in place very tightly with a semielastic bandage, if the patient does not walk he will suffer a great deal of pain and often demand the removal of the sponge and bandage or even remove it himself on account of the severe pain. If, however, the same patient is impressed by his physician with the advisability and necessity of doing a great deal of walking with the sponge and bandage applied, instead of having pain he will find that the pain and soreness in the ulcer area rapidly disappear. Not only will the soreness disappear, but active exercise of his legs gives other important results. During the walking the sponge acts much in the way of a heart, not only passively compressing tissues but with each systole of the sponge actually actively pumping serum, lymph and venous blood from the tissues and small blood vessels and allowing with each sponge

diastole a fresh flow of arterial blood into these vessels and tissues. Thus the sponge gives a soft, gentle massage to the tissues when the patient is walking. The pumping action is explained as follows: Each time a patient takes a step his calf muscles, while contracting, bunch up momentarily, giving a tug on the bandage which is passed on to the rubber sponge. This produces active compressive action of the sponge, which alternates with a comparative relaxation period when the calf muscles relax. Firm pressure is maintained all the time, however, although intermittently increased. The truth of this mechanism can be easily proved if one feels of the rubber sponge while the patient is walking. It is more clearly and graphically shown when the rubber cuff of a blood pressure manometer is placed over the ulcer or calf and bandaged with a four inch semielastic bandage. The bag should be inflated to the size of a rubber sponge actually used in treatment. When the bandage is wrapped firmly, as in a case with much edema and infection, the manometer will show a pressure of about 80 mm. of mercury. When the patient stands and shifts the weight of the body back and forth, first on one foot and then on the other, the reading of the manometer will vary from 80 to 100 mm. with each firm contraction of the calf muscles. This increase of pressure each time is passed on to the tissues beneath, thus giving the massage or pumping effect. This being the case, the rubber sponge can rightfully be called a "rubber or venous heart." The tightly wrapped, semielastic bandage gives steady compression on the leg generally and overcomes the reflux flow and lymph stagnation. The superfluous fluid is thus forced from the tissues and pumped up and out of the leg. The actual care and treatment of a varicose ulcer with the rubber sponge and bandage is described in detail.

Texas State Journal of Medicine, Forth Worth

27: 59-202 (June) 1931

Memorial Address. S. E. Thompson, Kerrville.—p. 67.
Progress of Modern Medicine. J. W. Burns, Cuero.—p. 68.
Auxiliary as Related to Medical Profession. Mrs. O. M. Marchman, Dallas.—p. 72.

Western J. of Surg., Obst. & Gynec., Portland, Ore.

39: 409-488 (June) 1931

*New Conception of Some Morbid Changes in Diseases of Thyroid Gland Based on Experimental Studies of Normal Gland and Thyroid in Exophthalmic Goiter. W. F. Rienhoff, Jr., Baltimore.—p. 421.
Mesenteric Vascular Occlusion. G. Thomason, Los Angeles.—p. 444.
Problems of Traumatic Surgery. H. J. Whitacre, Tacoma, Wash.—p. 449.
Psychoses, Neuroses and Dishonesty. A. C. Stewart, Tacoma, Wash.—p. 452.
Clinical and Pathologic Study of Carcinomatous Gastric Ulcer, with Particular Reference to Grading of Malignancy. W. H. Bueermann, Portland, Ore.—p. 456.

Experimental Thyroid Studies.—A wax reconstruction made by Rienhoff of the thyroid in exophthalmic goiter showed an enormous increase in the size of the follicles, and indentations in the wax models of these follicles bore witness to the papillomatous infoldings of the epithelium. However, the small follicles that were observed in stained sections of the gland in exophthalmic goiter to have been situated in a position peripheral to that of the larger follicles were shown both by the wax plate reconstruction and more strikingly by the maceration and microdissection to be entirely discontinuous from the larger follicles. The small ones were distinct individual follicles and not, as has been suggested, pseudopodial outpouchings of the epithelial wall of the large follicle. The follicles, both large and small, have a smooth external epithelial wall. The only papillomatous or pseudopodial irregularities are those observed in the lumen of the follicle. The true external form of the follicle was brought out by the technic of maceration and dissection, while the internal shape or cast of the inside of the follicle was shown better by the wax models. By the use of maceration and microdissection, it was possible to demonstrate that the main mass of the thyroid is divided and subdivided into many connecting or annectent bars, bands and plates of parenchyma, which in turn are composed of individual, discrete and discontinuous follicles. There are no distinct and true lobules in the thyroid, and it is incorrect to speak of it as a lobulated gland. From the study of the structure of the thyroid it is obvious that tumors arising in the gland must come from mature completely differentiated thyroid parenchyma.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

6: 137-208 (June) 1931

*Pink Disease: Its Morbid Anatomy, with Note on Treatment. W. G. Wyllie and R. O. Stern.—p. 137.
Malignant Hypertension in Childhood. J. Craig.—p. 157.
Acute and Chronic Nontuberculous Pyuria in Children. A. V. Neale.—p. 165.
Distribution of Phosphorus Compounds and Calcium in Blood of Children. M. Sokolovitch.—p. 183.

Pink Disease.—Wyllie and Stern obtained satisfactory results with raw liver in five human cases of pink disease (erythredema). While the five cases were under observation, no other special form of treatment was given. Cod liver oil and orange juice were included in the diet but had already been given at home in two instances. The fairly rapid improvement witnessed in four of the cases speaks well for liver therapy. It appeared to arrest the activity of the disease within a short time, a week to fourteen days, although a considerably longer period was necessary for such signs as the cyanosis of the extremities and the photophobia completely to disappear. A return of the knee jerks, as might well be expected, was delayed the longest. One of the earliest effects of liver therapy was noticeable improvement in the general condition of the patient: the irritability and pain apparently quickly subsided. None of the cases relapsed. The authors state that, although five cases is too small a number on which to base definite views, from the results they obtained with liver therapy they submit that a dietetic factor contained in liver has a definite value in curing the disease. Of the nature of this factor, and whether a deficiency of it can cause the disease in the absence of a positive factor, possibly infective, they are at present unable to judge.

Bristol Medico-Chirurgical Journal

48: 83-166 (Summer) 1931

Some Reminiscences and a Forecast. E. J. Maclean.—p. 83.
Modern Outlook on Mental Health. L. G. Brock.—p. 97.
Some Intestinal Malformations and Their Clinical Significance. A. L. Taylor.—p. 113.
Some Disorders of Movement and Their Mechanism. H. H. Carleton.—p. 135.
Strangulated Hernia. N. Kemm.—p. 151.

British Journal of Ophthalmology, London

15: 369-432 (July) 1931

Epidemiology of Trachoma. A. F. MacCallan.—p. 369.

British Journal of Urology, London

3: 119-243 (June) 1931

Principles and New Advances in Excretion Urography. A. von Lichtenberg.—p. 119.

British Medical Journal, London

2: 1-22 (July 4) 1931

Stature and Pose: Problem of Unequal Legs. E. W. H. Groves.—p. 1.
Case of Pernicious Anemia Resistant to Treatment. A. M. Kennedy.—p. 5.
Subacute Bacterial Endocarditis Following Removal of Septic Foci. L. Abrahamson.—p. 8.
Three Generations of Inherited Dental Defect. M. E. Rutherfurd.—p. 9.
Heredity and Dupuytren's Contraction. J. S. Manson.—p. 11.
Disseminated Encephalomyelitis Following Spinal Anesthesia. T. K. MacLachlan.—p. 11.
Hyoscine Amnesia in Labor, With or Without Chloroform: Thirty-Five Cases. A. M. Claye.—p. 12.
Phimosis and Circumcision. A. E. Sawday.—p. 14.

2: 43-68 (July 11) 1931

Significance of Raised Blood Pressure. J. Hay.—p. 43.
Mesothelial Reactions in Childhood. J. Fraser.—p. 47.
Hour-Glass Contraction of Stomach. R. P. Rowlands.—p. 50.
Vitamin B_2 and Pellagra: Etiology of Pellagra. B. C. Guha.—p. 53.
Ménière's Disease. W. S. T. Neville.—p. 54.
Miners' Nystagmus. W. J. Roche.—p. 55.

Edinburgh Medical Journal

38: 405-456 (July) 1931

Further Method of Estimating Potency of Liver Extract. J. P. McGowan and R. D. Sinclair.—p. 405.
Social Psychiatry. D. K. Henderson.—p. 414.

Indian Medical Gazette, Calcutta

66: 299-362 (June) 1931

*Opium and Albuminuria. R. N. Chopra and J. P. Bose.—p. 299.
Relation of Acetonemia to Juvenile Ill Health in India. E. H. V. Hodge. —p. 302.
Infantile Biliary Cirrhosis and Artificial Feeding of Infants in India. S. B. Gothoskar.—p. 304.
Scarlet Fever in Bombay. P. T. Patel.—p. 306.
Ovarian Tumors: Ten Years' Record of 547 Cases. V. B. Green-Armytage.—p. 313.
An Improved Type of Obstetric Bedstead. S. N. Hayes.—p. 315.
Removal of Foreign Bodies from Esophagus by External Manipulation. D. H. Variava.—p. 316.
Determination of Nitrogen in Sour Milk as Subsidiary Standard of Purity. A. D. Stewart and N. K. Chatterjee.—p. 320.
Malaria Survey in Noakhali District, Bengal. S. L. Sarkar.—p. 322.

Opium and Albuminuria.—Chopra and Bose administered opium in doses ranging from 1 to 9 grains (0.065 to 0.6 Gm.) daily in a series of twelve cases of albuminuria due to various causes. In the majority of cases the output of urine definitely increased. The quantity of albumin generally showed an appreciable decrease and in none of the cases was there any indication of added damage to the kidneys, evidenced by a persistent rise in the quantity of albumin or an increase in the number of casts. The general condition of the patients improved in all cases and they felt much more comfortable. A study of these cases showed that, if care is taken to keep the bowels working well, opium can be administered in fairly large doses to patients with albuminuria.

Lancet, London

1: 1383-1436 (June 27) 1931

*Obstetric Sepsis: Its Treatment by Prevention. B. Solomons.—p. 1383.
*Diphtheritic Hypopiesia. C. F. Brockington.—p. 1387.
*Plasma Cholesterol in Nephritis: Observations on Series of Cases. C. M. Fleming.—p. 1390.
Chronic Perisplenitis with Signs Suggesting Carcinoma of Stomach. A. J. Gardham.—p. 1397.

Obstetric Sepsis.—Solomons asserts that prenatal care, though important, must not mask the fact that complications of labor will occur in spite of it. There is a cure for all cases of sepsis. It is a mistake to concentrate on one method of treatment. The difficulty is to discover the treatment suitable for the case. In a questionnaire to a small number of patients who had been morbid in the puerperium, the complaints were found to be surprisingly small; 58 per cent became pregnant soon afterward. At the Rotunda Hospital in Dublin there were 250 morbid cases in 6,075 deliveries, i. e., 4.1 per cent; of these 50.1 per cent were operative cases. Meddlesome midwifery should be avoided when possible. Figures of hospitals where teaching is not done should be better than those where there is much instruction given. Aseptic dressings around the vulva are more inclined to be a danger than a preventive. While forceps may be used, such procedures as the delivery of a head in the superior strait by the Kielland or any other forceps is condemned. Small isolation wards for suspect cases in pregnancy, labor and the puerperium are necessary.

Diphtheritic Hypopiesia.—According to Brockington, the blood pressure in diphtheria begins to fall after the seventh day, reaches the lowest point about the twelfth day, and rises again to normal about the twentieth day. This fall occurs in all grades of diphtheria. The depth of the fall is in direct relationship to the severity of the attack. In the severest cases the fall may be so great as to occasion a clinical condition that in many cases is fatal. This condition, which occurs late, accounts for about 50 per cent of the deaths during the first three weeks and is clearly distinguishable from the classic early cardiac failure.

Plasma Cholesterol in Nephritis.—Fleming states that, although the majority of investigators consider the normal range of the cholesterol content of the plasma to lie between 130 and 200 mg. per hundred cubic centimeters, the results of his investigation suggest that the upper normal limit frequently exceeds the accepted figure. In acute nephritis, although the level of cholesterol may or may not be unduly high, recovery is accompanied by a decrease. A tardy fall is associated with a slow or incomplete recovery. The degree of edema is not proportional to the amount of cholesterol in the plasma. The onset of convulsions is not closely related to an abnormal cholesterol content; when nitrogen retention is present (one case) the cholesterol content is normal. In chronic interstitial nephritis the plasma cholesterol is within normal limits, unless pronounced arterial degeneration is present. The onset of uremia is accompanied by a fall in the cholesterol level. Recovery from uremia is attended by a rise in the cholesterol content. In arteriosclerosis, when a renal lesion is present, the cholesterol value is constantly high. In chronic parenchymatous nephritis the plasma cholesterol is raised to a greater degree than in any other type of nephritis. Edema is usually associated with hypercholesteremia, but occasionally exceptions may occur. During convalescence, the cholesterol level tends to rise rather than to fall. Further observations suggest that this rise may be temporary, to be followed by a gradual decrease to normal. In the mixed type of nephritis constant values are found, but the average figure is above normal. In renal conditions other than nephritis, hypercholesteremia is not found. Cardiac cases with edema do not show an increase in plasma cholesterol.

Medical Journal of Australia, Sydney

1: 649-678 (May 30) 1931

Chronic Respiratory Infections in Childhood. G. Springthorpe.—p. 649.
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1: 679-708 (June 6) 1931

Public Health in Australia: III. Developments After 1850. J. H. L. Cumpston.—p. 679.
Some Recent Developments in Radiologic Examination of Gastro-Intestinal Tract. J. O'Sullivan.—p. 685.
Treatment of Fibroids of Uterus. H. H. Schlink and C. L. Chapman. —p. 691.

Practitioner, London

127: 1-224 (July) 1931

Fractures and Accidents: Introduction. R. Jones.—p. 1.
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Traumatic Dislocation of Hip. A. B. Jones.—p. 157.
Treatment of Fractures of Femur. S. L. Higgs.—p. 164.
Injuries of Knee Joint. R. Ollerenshaw.—p. 178.
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Injuries of Foot. W. Mercer.—p. 203.
Sports Injuries and Their Treatment. C. B. Heald.—p. 218.

China Medical Journal, Shanghai

45: 487-582 (June) 1931

Thrombo-Angiitis Obliterans: Disease in Koreans. A. I. Ludlow.—p. 487.
Id.: Treatment by Alcohol Injection of Wall of Femoral Artery. J. M. Rogers.—p. 515.
Conservative Treatment of Thrombo-Angiitis Obliterans: Results of Ligation of Femoral Vein in Six Cases. N. D. Fraser.—p. 519.
Thrombo-Angiitis Obliterans: Treatment by Ligation of Femoral Artery and Vein Below Deep Femoral Vessels: Case. T. Stearns.—p. 521.
Thrombo-Angiitis Obliterans in Siam. T. P. Noble.—p. 523.
Elastic Soft Palate and Uvula. A. M. Dunlap.—p. 528.
Physiologic Action of Light. H. B. Collier.—p. 530.
Experiences in Lithotomy in Tungkun Hospital. O. Hueck.—p. 546.

Japanese J. of Obstet. & Gynecology, Kyoto

14: 66-151 (April) 1931

Experimental Investigation of Hepatic Function in Pregnancy: I. Metabolism of Carbohydrate. T. Yokota.—p. 66.
Id.: II. Hepatic Amylase. T. Yokota.—p. 91.
Prolapsus Uteri and Constitution. J. Nakagawa.—p. 106.
Experimental Investigation of Effect of Nervous System on Function of Genital Organs: VI. What Influence Will Be Brought About on Organic Change of Female Genitalia Caused by Spermatoxin, by Mechanical Disturbance of Sympathetic Nerve? K. Minamikawa. —p. 124.
Treatment of Hemorrhage Due to Cervical Rupture After Delivery. M. Oike.—p. 128.
Diagnostic and Therapeutic Value of Puncture of Douglas' Pouch. M. Oike.—p. 131.
Duration of Menstruation and Development of the Newly Born Infant. J. Ogawa.—p. 133.
Effect of Artificial Interruption of Pregnancy on Next Labor. J. Ogawa. —p. 137.

Archives des Maladies du Cœur, etc., Paris

24: 209-272 (April) 1931

*Cyanosis Caused by Alveolar Hypoventilation. L. Ayerza, L. A. Solari and I. Berconsky.—p. 209.
*Adiastole. L. Pescador, R. Novoa Santos and M. Carmena.—p. 229.
*Fallot's Tetrad: Roentgen Diagnosis. C. Papp.—p. 249.

Cyanosis Following Bronchopneumonia.—Louis Ayerza and his collaborators report a case of a so-called cardiaque noir d'Ayerza. Abel Ayerza applied this term to persons with a history of a bronchopulmonary condition who suddenly develop an intense cyanosis limited to the face, hands and feet and becoming permanent. The syndrome is accompanied by polycythemia and somnolence but not by any signs of cardiac insufficiency. The authors believe that the cyanosis is due to the fact that the hemoglobin of the arterial blood is not sufficiently oxygenated on account of the diminished tension of the alveolar oxygen caused by pulmonary hypoventilation. In spite of various examinations employed they were unable to demonstrate cardiac insufficiency. With regard to the physiopathologic genesis of the case, they state that the deficient oxygen tension gives rise to an incomplete saturation of hemoglobin, the consequence of which is the marked cyanosis. The accumulation of carbon dioxide in the alveoli provokes the increase of the alkali reserve, the chronic compensated gaseous acidosis, the increase in the erythrocytic volume, the capillary dilatation and the tachycardia. The authors' conclusions are as follows: 1. The cyanosis of the "black cardiac patient" (Ayerza) studied is due to a low tension of the alveolar oxygen caused by alveolar hypoventilation. 2. At the present time the patient does not present symptoms of demonstrable cardiac insufficiency.

Adiastole.—Pescador and his associates report five cases of adiastole. They reproduce electrocardiograms of adiastoles provoked experimentally in animals as well as those of human beings with the condition. They state that the three characteristic electrocardiographic changes noted in adiastole were found in all their cases; they are: (1) increase in the P deflection; (2) diminution of Q-R-S complex and (3) increase in the T deflection. They state that the essential difference between the electrocardiograms of persons with the adiastolic complex and those with a diminution in the ventricular complex caused by myocarditis or myocardosis is that in the former condition there is an increase in the P and T deflections, a change that is not observed in cases of inflammation or degeneration of the heart muscle.

Fallot's Tetrad.—Papp reports three cases of Fallot's tetrad, which consists of a narrowing of the pulmonary artery, an interventricular communication, hypertrophy of the right ventricle and deviation of the aorta to the right. His conclusions are as follows: The diagnosis of Fallot's tetrad is chiefly a roentgenologic one, based on the following signs: (1) the ascending aorta is deviated markedly to the right of the spinal column, and (2) the middle arch that corresponds to the pulmonary artery is absent on the left, being replaced by a concavity or depression. The diagnosis of Fallot's tetrad is difficult in children because their aorta is not so visible in oblique positions.

Bull. et. Mém. de la Soc. Méd. des Hôpitaux de Paris

47: 795-892 (May 25) 1931

*Meningeal Form of Myotonia Caused by Azotemia with Hypochloremia. P. Merklen and H. Gounelle.—p. 796.
*Anicteric Meningeal Spirochetosis. M. Laignel-Lavastine, Y. Boquien and C. Puymartin.—p. 802.
*Primary Abscess-Like Cancer of Lung. E. Sergent, H. Durand, Kourilsky and Couve.—p. 806.
*Curability of Putrid Suppurations of Lung: Treatment by Artificial Pneumothorax. A. Jacquelin.—p. 812.
*Herpes Facialis After Vaccination with TAB. Netter.—p. 816.
*Cancer of Lung. J. Cathala, G. Maingot and Strée.—p. 818.
Chronic Tuberculous Polyarthritis. F. Bezançon, M. P. Weil, J. Delarue and V. Oumanski.—p. 821.
*Cirrhosis of Liver and Thyro-Ovarian Insufficiency. Laignel-Lavastine, J. Troisier and Y. Boquien.—p. 829.
*Chronic Fibrous Rheumatism: Scleroderma: Subcutaneous Calcareous Concretions. R. J. Weissenbach, P. Truchot, F. Françon and M. Laudat.—p. 837.
*Sympathetic Syndrome and Ophthalmic Migraine Caused by Therapeutic Pneumothorax. C. Dimacopoulo.—p. 848.
Epilepsy in Persons with Heart Disease or Cardiac Epilepsy. C. I. Urechia.—p. 851.
*Gangrenous Tonsillitis with Hypogranulocytosis, Anemia and Purpura. C. Achard, M. Bariéty and G. Desbuquois.—p. 854.
*Hemophilia: Case. C. Achard, M. Bariéty, G. Desbuquois and Cachera. p. 863.
*Relapse in Pure Meningeal Spirochetosis. M. Garnier, P. Nicaud and A. Maisler.—p. 869.
*Gastric Auscultation Under Roentgenoscopic Control. A. Delaigue and G. Hutet.—p. 875.
*Acute Leukemia with Arthritis and Purpura. M. Debray, L. Michaux and J. Sainton.—p. 881.
Kala-Azar in Adult. E. Benhamou, R. Gille and A. Nouchy.—p. 884.

Meningeal Form of Myotonia.—Merklen and Gounelle report a case of a meningeal form of myotonia in a woman with a marked hypochloremia caused by dechloridation. The origin of the condition was in an acute attack of azotemia that gave rise to the meningeal myotonia with associated myoclonias. Three months after the disappearance of the attack there still was present a slight albuminuria as evidence of a renal process which found its confirmation in a tendency to the diminution in the alkali reserve but against which there was a low urea content of the blood and an elimination of phenolsulphonphthalein above normal.

Anicteric Meningeal Spirochetosis.—Laignel-Lavastine and his collaborators report a case of anicteric meningeal spirochetosis. Their conclusions are as follows: Pure meningeal spirochetosis is rare. Its etiology is interesting because it is another example of a water-borne infection, which is encountered so often in the pathogenesis of spirochetosis. The authors believe that in their case the infection was by the digital route, because of the presence of large epitrochlear lymph nodes in contrast with the small ones in the rest of the body. There is nothing of especial significance in the symptomatology of this syndrome. The authors noted only slight renal changes with a moderate azotemia (before the urinary crisis) and a transitory albuminuria. Signs of liver involvement were not noted. Lumbar puncture revealed a marked cyto-albuminuric dissociation.

Cancer of Lung.—Sergent and his collaborators report a case of a primary abscess-like cancer of the lung. They state that the history of the case is in accord with the well established fact that cancer of the lung remains latent until it suddenly softens, forms a cavity, and suppurates. In their case the infected lung had reacted, as shown at necropsy by a chronic bronchopneumonia with a distant abscess and pleural adhesions. While the consequences of the suppuration were manifesting themselves, the primary cancerous lesion continued to progress. This explains the invasion of the mediastinal lymph nodes, which had produced a paralysis of the left recurrent nerve, and the progressive cachexia and vascular ulcerations, which had given rise to hemoptysis and finally to a fulminating terminal hemorrhage. The authors do not attempt to establish a relation of cause and effect between several pieces of a hand-grenade which the patient had carried in his lung for thirteen years and the development of the cancer. They state that they agree with Graham that in all persons over 40 with a persistent pneumopathic syndrome one must consider the possibility of a primary cancer of the lung. Physicians should remember this and also the fact that primary cancer of the lung is characterized by a marked clinical polymorphism and may simulate many highly variable conditions.

Suppuration of Lung.—Jacquelin reports eight cases of suppuration of the lung in which he used artificial pneumothorax (method of Forlanini). All the patients were cured. The author's conclusions are as follows: Artificial pneumothorax is a most valuable method of treatment in these conditions. It is safe. It is not painful and does not cause shock. It should be induced early while the pleura is still free from adhesions, because then it is easy. If pneumothorax is induced correctly and under negative pressure there should not be a laceration of the pleura. Pneumothorax is contraindicated in superficial, subpleural gangrenous cavities, whereas in juxtahilar or central deep cavities it is of maximal efficacy.

Herpes Facialis.—Netter discusses the observations of an army medical officer with regard to an outbreak of facial herpes following TAB vaccination of 320 recruits. In seventy (22 per cent) of them there developed eight days after the vaccination an eruption of herpes around the mouth and nose or on the cheeks or ears. The appearance of facial herpes after

antityphoid vaccination has been noted for a long time, especially by ophthalmologists. The interest of this report is in the abnormally high proportion of the persons affected. It is also of interest to note that facial herpes is rarely seen in the course of typhoid. The author concludes by supporting the army medical officer in his statement that any vaccine, as TAB or colon bacillus, gonococcus or meningococcus vaccine, acts as a provocative agent permitting the escape of the herpetic ultravirus, which exists as a saprophyte in many healthy persons. Vaccination changes the virus from a saprophytic to a pathogenic state.

Cancer of Lung.—Cathala and his associates report a case of a cancer of the lung which markedly resembled an hydatid cyst roentgenologically. The authors conclude as follows: The case demonstrates once more how careful one must be in interpreting even the most characteristic roentgen shadows. Roentgenologically the case was a typical instance of hydatid cyst with rupture into the bronchi. On the basis of the clinical examination, however, a diagnosis of ulcerated cancer of the lung was made and this diagnosis was confirmed at necropsy.

Cirrhosis of Liver and Thyro-Ovarian Insufficiency.—Laignel-Lavastine and his collaborators report seven cases of cirrhosis of the liver associated with phenomena of thyro-ovarian insufficiency. They stress the parallel evolution of the cirrhotic and endocrine symptoms. Changes in the appendages of the skin, with progressive loss of hair and eyebrows, myxedematous aspect, mammary atrophy and ovarian insufficiency leading to sterility developed simultaneously with the evolution of the cirrhosis of the liver. The future will reveal whether the proper therapy of the endocrine deficiency acts favorably on the progress of the cirrhosis of the liver and, if it does, to what degree. This therapy is logical, because it has been demonstrated that thyroid treatment gives good results in other syndromes with the same humoral disorders.

Chronic Fibrous Rheumatism: Scleroderma: Calcareous Concretions.—Weissenbach and his associates studied the problem of calcareous concretions in the subcutaneous connective tissue. Their conclusions are as follows: A case reported constitutes a typical example of the association in the same patient of two syndromes: chronic fibrous rheumatism of the fingers and subcutaneous calcareous concretions. The presence of skin changes, especially of thickening and densification of the skin of the cheeks, chin and neck, at the present time in the process of slow extension and accentuation, adds to the clinical picture a supplementary element: a moderate circumscribed scleroderma. The precipitation of calcium salts in the tissues should not be attributed solely to the increase in the blood calcium. Local changes in the physicochemical affinity of the tissues play an important and probably exclusive part in some of the cases.

Sympathetic Syndrome and Ophthalmic Migraine.—At the end of his report Dimacopoulo gives the following summary: In a patient treated with pneumothorax for a left ulcerocaseous tuberculosis, there appeared almost immediately after the first insufflation cardiac, respiratory, dyspeptic, vasomotor and psychic disturbances that in their ensemble markedly resembled the disturbances characteristic of the sympathetic syndrome described by Ramond and Carrié. Besides, there was also present an ophthalmic migraine on the side of the insufflation. That the pneumothorax was the cause of these disorders and not just a coincidence is evident, because the patient had never before had similar symptoms.

Gangrenous Tonsillitis.—Achard and his associates report two cases of severe tonsillitis with hypogranulocytosis, anemia and purpura. They stress the prognostic value of the degree of hypogranulocytosis in these cases; both their patients had only a moderate hypogranulocytosis and both recovered.

Hemophilia.—Achard and his associates report a case of hemophilia in a youth, aged 16. The disorder started at the age of 2 with hemorrhages from the skin and mucous membranes, hematurias and arthropathies. They emphasize the following points in the development of the condition: 1. It was a case of familial hemophilia because a brother of the patient had died from the same condition. 2. There was present in this case all the classic characteristics of hemophilia: repeated hemarthroses; the coagulation time varied between seven and ten hours. However, the hemophilic syndrome was not a pure one. The hematogenic participation manifested itself by a prolongation of the bleeding time to twenty minutes. 3. The calcium content of the blood was not lowered: it was even a little higher than normal. Normal calcemia is the rule in hemophilia. 4. From a therapeutic point of view the resistance of the patient to serotherapy should be taken into consideration. During his first stay in the hospital the action of antidiphtheritic serum was slow and incomplete. During his second stay, antidiphtheritic serum had no action at all. 5. Transfusions, on the contrary, had a quasimiraculous effect. During a period of a month four transfusions, a total of 1,100 cc. of blood, were given. The results were excellent not only with regard to the hemophilia but also with regard to the patient's general condition. 6. But four subsequent transfusions, a total of 1,000 cc., given over a period of three days, failed to stop additional hemorrhages, from which the patient died. The authors discuss the causes of this variation in the action of blood transfusion.

Relapse in Pure Meningeal Spirochetosis.—Garnier and his associates report an instance of relapse in a case of pure meningeal spirochetosis. They state that the diagnosis of pure meningeal spirochetosis can be made only by serodiagnosis and by experimental researches. One should think of it in cases of meningitis with a lymphocytic reaction, especially if one notes some of its clinical signs, as nasolabial herpes and conjunctival injection.

Gastric Auscultation.—Delaigue and Hutet studied the value of gastric auscultation under roentgenoscopic control. Their conclusions are as follows: Auscultation of the stomach is not destined to become of such value or primary importance as auscultation of the lungs or heart, yet it is a physical sign that one should train oneself to elicit. The information that one can obtain from this method can be used in the study of the modes of repletion, contraction and evacuation of the stomach. The study of pyloric bruit is particularly instructive. Of course, roentgen examination remains the most precise method of pyloric exploration, but auscultation has the advantage of being made following the ingestion of food instead of a barium meal; this makes a difference with regard to evacuation. The method brings immediate results with the first examination and serves in the orientation of the diagnosis. Finally, it gives information of a different order, and it is in this direction that one must search to complete the diagnosis.

Acute Leukemia with Arthritis and Purpura.—Debray and his collaborators report a case of acute leukemia with pronounced articular symptoms. They state that the case is interesting from the hematologic point of view because of the great increase in the number of leukocytes (128,000), the marked diminution in the number of erythrocytes (1,730,000-1,170,000) and the coexistence of a well developed hematogenic syndrome. The association of leukemia with arthritis and purpura suggests rheumatic purpura, but symptoms observed in the patient studied were entirely different from those noted in the latter condition. After discussing various possibilities of the syndrome encountered, the authors conclude by considering the possibility of an infectious nature of the acute leukemia.

Journal d'Urologie Médicale et Chirurgicale, Paris

31: 321-432 (April) 1931

*Abacterial Pyuria. P. Bazy and P. Oudard.—p. 321.
Bacterium Coli-Communis and Pseudostreptococcus. J. Fisch.—p. 353.
*Renal Function: Phenolsulphonphthalein: Its Interrelation with Cholesterol and Uric Acid in Blood. G. Giordanengo and G. Colombet. —p. 357.
*Functional Megabladder Due to Obstruction of Prostatic Urethra by Stone: Extraction: Cure. Diamantis.—p. 366.
Oleocalculus of Bladder: Case. B. Jehiel.—p. 372.

Abacterial Pyuria.—Bazy and Oudard made comprehensive observations on fourteen patients who came under their treatment for various disorders of the genito-urinary system. Their conclusions are as follows: 1. There probably exist permanent abacterial leukocyturias or pyurias with intermittent passage of bacteria which one can designate as intermittent abacterial pyurias. The intermittent disappearance of the bacteria corresponds to a process of autosterilization, whose mechanism is

poorly understood. 2. Besides the abacterial leukocyturias of chemical or mechanical origin, there are leukocyturias or pyurias of an infectious nature, in which the micro-organism cannot be demonstrated, except by a great number of examinations, because it rarely passes into the urine. 3. There exist pyurias or abacterial leukocyturias that are caused by a unilateral juxtarenal or, perhaps, parenchymatous lesion, or perhaps by neither of them. The micro-organism may be a common one, as *Bacterium coli-communis*, or the staphylococcus, but one would have to consider also the possibility of a tuberculous abscess or a syphilitic gumma. 4. One is not justified in making a diagnosis of renal tuberculosis in a case of abacterial pyuria unless one has inoculated guinea-pigs and the results of inoculation are positive. The authors emphasize this because nephrectomies are performed on the simple basis of an abacterial pyuria in which direct examination and cultivation are negative.

Renal Function.—Giordanengo and Colombet studied thirty patients (mostly with hypertrophy of the prostate) with regard to renal function, phenolsulphonphthalein and its interrelation with cholesterol and uric acid in the blood. They state that the increase in the elimination of cholesterol is parallel with the diminution in that of phenolsulphonphthalein. The authors' conclusions are as follows: 1. The amount of cholesterol may be used as an approximate index of the elimination of phenolsulphonphthalein, taking into consideration, of course, the age of the person. 2. Cholesteremia being an evidence of the liver function, the elimination of phenolsulphonphthalein depends not only on the renal function but also on that of the liver. 3. Therefore in the presence of a poor elimination of phenolsulphonphthalein one should determine the cholesterol content of the blood. One can in this manner determine the preponderating part of the liver or kidney in this deficiency of elimination. 4. No information can be obtained from a determination of the uric acid content of the blood.

Functional Megabladder. — Diamantis reports a case of functional megabladder in a child, aged 3. The distention was caused by an obstruction of the prostatic urethra by a small stone that was extracted by the author. The boy made an uneventful recovery. The author's conclusions are as follows: Megabladder is characterized, independently of its origin (congenital or functional), not so much by the overdistention, which may be observed also in prostatic obstruction, but especially and particularly by the lack of contractility of the bladder wall; because of this the distention progresses until it is stopped by external obstacles as the bony wall of the pelvis. This is the reason why in a bladder with a retention of a liter or more and in emaciated persons one observes a bulging of the hypogastric region but cannot delimit the bladder.

Paris Médical

1: 501-516 (May 30) 1931

*Pathogenesis of Urinary Gravel. J. Schneider and A. Codounis. —p. 501.
*Vaccinotherapy in Rheumatic Myocarditis. R. Lautier.—p. 507.

Pathogenesis of Urinary Gravel.—Schneider and Codounis observed fifty-two patients with various disorders. The researches performed were mostly in the line of cytobacteriologic examination of the urine and its sediment. *Bacterium coli-communis* was identified in a pure state twenty-eight times and associated with other bacteria nine times. Among these thirty-seven cases calcium oxalate was found twenty-five times, a proportion of 76.55 per cent. Enterococci were identified in a pure state nine times and associated with other bacteria nine times. Among these eighteen cases free uric acid or sodium urate was found twelve times, a proportion of 66.66 per cent. In nine cases crystallization was not demonstrated. In one case bacteria were not found. The actual percentage, after deducting the cases of urines without crystals, was 86.20 per cent of cases in which calcium oxalate was coincident with *B. coli-communis* and 75 per cent of the cases in which uric acid was coincident with the enterococcus. The authors' conclusions are as follows: *B. coli-communis* seems to require the presence of calcium oxalate and a neutral or even definitely alkaline medium, whereas the enterococcus, which is more common in infected urine than is commonly supposed, seems to prefer a more acid medium with a predominance of crystals of sodium acid urate or of crystals of free uric acid. The staphylococcus occurs rarely in the urine; it is encountered mostly in alkaline urine with a predominance of amorphous phosphates or of crystals of ammoniomagnesium phosphate. The authors state that because of inadequate figures they prefer not to draw any definite conclusions concerning urinary lithiasis. It is not well established yet that the latter is always of a bacterial nature. The authors believe that the bacteria themselves are not capable of producing crystals; however, they form some sort of intermediary link in the chain. The authors consider the probability of some ferment, which might be produced by the leukocytes. One of them experimented with purely aseptic urine, free from bacteria and leukocytes, which was inoculated with cultures of different micro-organisms. The crystallization did not occur even after four days. The same was true in experiments performed with sterile urine inoculated with several cultures, to which blood was added to supply the leukocytic element. They call the attention of biologists and especially of clinicians to the fact that in many instances the diagnosis and treatment of urinary gravel will be facilitated if one will determine the kind of bacteria in the urine.

Vaccinotherapy in Rheumatic Myocarditis. — Lautier studied a large series of various types of rheumatic myocarditis. He reports the results of his treatment. He states that with a few unimportant exceptions his method of treatment, mainly antirheumatic vaccinotherapy supplemented with digitalis preparations, gave excellent results. The author firmly believes in the approach of a new era in the therapy and prophylaxis of heart disease.

Presse Médicale, Paris

39: 769-792 (May 27) 1931

*Calcium Antifixators. G. Mouriquand, A. Leulier, M. Bernheim and Weill.—p. 769.
*Clinical Autonomy of Constitutional Angiohypotonia. A. Ferrannini. —p. 771.
*Action of Sulphur Mineral Waters in Diabetes Mellitus. I. Daniel and M. P. Buzeu.—p. 772.
Constitutional Depression: Asthenia, Emotivity, Physicochemical Dis equilibrium. M. Montassut and M. Delaville.—p. 774.
*Causes of Right-Handedness in Man. F. Regnault.—p. 787.

Calcium Antifixators.—Mouriquand and his collaborators describe their researches on antifixators of calcium, particularly in children. Their conclusions are as follows: Epinephrine (experimentally), iodine and strontium appear to be true antifixators of calcium. Infections (syphilis and others) and intestinal and vascular disorders may also act in the same manner in conditions that at present are still obscure and which the clinician assisted by the experimenter must clear up.

Clinical Autonomy of Constitutional Angiohypotonia. —Ferrannini proves that the clinical autonomy of what he designates as "constitutional angiohypotonia" is clear. He states that this view would be more surely and more quickly accepted if one would reach an agreement on the name proposed by him, in which are expressed two postulates: the permanent and idiopathic origin of the anomaly of the arterial and venous vessels and on the interreaction of this phenomenon and the disorders of the entire organism.

Diabetes Mellitus.—Daniel and Buzeu investigated the influence of sulphur mineral waters in diabetes mellitus. They review the investigations of various other authors and cite often the names of Bürgi and Gordonoff. Among the disorders that characterize diabetes mellitus they include hyperglycemia at the beginning and glycosuria consecutively. Hyperglycemia is produced by an excessive intake or by an insufficient utilization of sugar. If the excessive intake does not consist of an excess of dextrose, one has to suppose that the condition is caused by an insufficiency of the glycogenic function of the liver. Insufficiency of utilization is caused by the fact that the tissues, or, more precisely, the cells, have lost the power of utilizing sugar. The sulphur mineral waters intervene by their hypoglycemizing action, by intensification of the glycogenic function of the liver, by a modification of the cellular membrane and by an improvement of the oxidizing processes. There is an analogy between the action of insulin and that of sulphur mineral waters and of sulphur. From the fact that this action is observed also in

normal persons, one may admit that sulphur favors the production of insulin. In any case it seems that sulphur possesses a double action: direct and indirect catalytic.

Causes of Right-Handedness in Man.—In his studies on the subject, Regnault reaches the following conclusions: One should not call a person left-handed in whom, on account of the kind of his trade or occupation, the left hand becomes stronger than the right one or in whom the upper left extremity is longer than the right one. Such persons in performing the rest of their habitual acts always remain right-handed. One should also not call persons left-handed who on the dynamometer register with their left hand a much higher figure than with their right hand. He cites authors who reported the proportion of left-handed persons as high as 12 per cent. Contrary to this there are authors who believe that it is not more than from 4 to 5 per cent. Regnault states that even these figures are too high. In his estimation the proportion of left-handed persons is not more than 2 or 3 per cent. In conclusion he states that it is equally wrong to study the question of right-handedness and left-handedness only on the basis of anatomy. From an anatomic study one obtains indications that must be corroborated by a physiologic investigation.

Giornale di Clinica Medica, Parma

12: 459-537 (May 20) 1931

*Vitamin B and Mechanism of Glycoregulation. R. Jonata.—p. 459.
Action of Insulin Administered by Mouth. S. Maugeri.—p. 501.
Nerve Complications Sometimes Associated with Undulant Fever. E. Sanfilippo.—p. 507.

Vitamin B and Mechanism of Glycoregulation.—Jonata, on the basis of experimental researches on rabbits and on nondiabetic and diabetic (senile diabetes) human beings, summarizes as follows the influence of vitamin B on the various factors of the glycoregulatory mechanism: In the rabbit, vitamin B does not exert an action on glycemia in the fasting animal. Provoked alimentary hyperglycemia is always notably attenuated if concentrated solutions of vitamin B are previously ingested, and especially if they are introduced by the parenteral route. Hyperglycemia provoked by the parenteral introduction of sugar solutions (dextrose and levulose) is always less intense if vitamin B is previously injected. Vitamin B has a strengthening effect on the hypoglycemic action of insulin. Hyperglycemia due to epinephrine is constantly and intensely inhibited by the administration of vitamin B. The simultaneous administration of ergotamine and vitamin B does not manifest a hypoglycemic action on glycemia in the fasting rabbit. The influence of vitamin B on provoked alimentary hyperglycemia is not modified particularly by the simultaneous administration of ergotamine. However, hyperglycemia from epinephrine is constantly inhibited by the injection of vitamin B plus ergotamine, from which fact it must be assumed that the action of vitamin B and that of ergotamine strengthen each other and exert on glycoregulation an influence frankly antagonistic to that of epinephrine. Thyroid, hypophyseal and ovarian extracts and extract of the interstitial gland do not influence the action of vitamin B on glycemia. In the nondiabetic man, vitamin B does not affect fasting glycemia. In nondiabetic subjects but in whom there is manifest a state of hypertonia of the sympathetic system, with a slight hyperglycemia and diminished susceptibility to the action of insulin, vitamin B manifests a frankly hypoglycemic activity. Provoked alimentary hyperglycemia is nearly always appreciably lowered if the ingestion of dextrose is preceded by the parenteral administration of vitamin B; at other times the glycemic curve is modified in its course only in a qualitative sense. Hypoglycemia due to insulin is usually slightly accentuated and hyperglycemia due to epinephrine is usually attenuated. In the diabetic (senile diabetes) person, vitamin B exerts on the hyperglycemia a constantly hypoglycemic action. The hypoglycemic action of insulin is slightly strengthened by the parenteral administration of vitamin B. Hyperglycemia due to epinephrine is not always inhibited by vitamin B. The alimentary hyperglycemic curve is not greatly affected by the parenteral introduction of extracts of vitamin B but is always notably modified in its course. Thus, in man, as well as in the rabbit, the hypoglycemic action of vitamin B has been shown to be the more intense, the higher and the further from normal the value of the glycemic index.

Policlinico, Rome

38: 691-726 (May 18) 1931. Practical Section

*Therapy of Pulmonary Gangrene. R. Liberti.—p. 691.

Therapy of Pulmonary Gangrene.—Liberti has found that, in pulmonary gangrene, arsenic therapy is a convenient and easy method that one can use with confidence. It is of sure effect in the spirillar forms and also when the micro-organisms are rare in the sputum. Hemoptysis is not a contraindication to the method. Contrary to the opinion of Neumann, who recommends that other methods be substituted for arsenic therapy when, after from eight to ten days' treatment, fever and expectoration persist, the author affirms that it is indispensable to continue for a few days longer—at least, up to twenty days—before changing to other treatment (surgery, pneumothorax), which, while more heroic, is associated with a high mortality. He reports two cases in which brilliant cures were effected by means of arsenic therapy.

Boletin de la Asoc. Méd. de Puerto Rico, San Juan

23: 185-206 (May) 1931. Partial Index

*Human Infestation with Fasciola Hepatica. O. Costa Mandry.—p. 186.
*Acute Cerebral Anemia During Operation Performed Under Spinal Anesthesia. M. Díaz García.—p. 193.

Human Infestation with Fasciola Hepatica.—Costa Mandry presents a case of human infestation with *Fasciola hepatica.* The condition is rare in human beings in Porto Rico, there being only two previous cases reported in the literature. Infestation of herbivorous animals (especially cattle), on the contrary, is common on the island.

Acute Cerebral Anemia During Operation Performed Under Spinal Anesthesia.—Díaz García advises more caution in the use of spinal anesthesia. It should be used not as a routine but only in properly selected cases. The author states that dogs subjected to certain experiments causing conditions of poor cerebral circulation (cerebral anemia) for five minutes show after recovery permanent cerebral lesions. If the condition of cerebral anemia of dogs in these experiments lasts for more than seven minutes, the animals die. It is possible that both the condition of the circulation during spinal anesthesia and the lowered blood pressure caused by the same type of anesthesia may cause in human beings some phenomena similar to those observed in animals. The author reports the case of a woman, aged 40, in whom the removal of a fibroma of the uterus was performed under spinal anesthesia. During the operation the patient showed a condition of apparent death with no respiration and complete absence of pulse, even the abdominal pulse. Intravenous and intracardiac injections of epinephrine, artificial respiration and massage of the heart region caused the respiration and beats of the heart to return to normal after four minutes of apparent death. The patient, however, had the appearance of having an attack of epilepsy, after which she remained unconscious for five days. She was discharged twenty days after the operation in fairly good condition, except for some mental disturbances, which finally disappeared some time later.

Semana Médica, Buenos Aires

38: 1345-1408 (May 21) 1931. Partial Index

*Ileocecal Tuberculosis: Treatment. A. G. Gallo.—p. 1345.
Anatomy of Cerebral Hemispheres: Cranial Tumors and Cranial Traumas Necessitating Operation. M. Balado.—p. 1380.
Crime and Insanity. J. R. Beltrán.—p. 1389.
Action of Congo Red in Hemoptysis. A. A. Cetrángolo, H. Passalacqua and J. Couzo.—p. 1399.
Effects of Ovarian Follicular Hormone Given by Mouth on Induction of Sexual Maturity in Immature Female Monkeys. W. Schoeller, M. Dohrn and W. Hohlweg.—p. 1400.

Ileocecal Tuberculosis.—Gallo studied tuberculosis of the ileocecal segment from the clinical and surgical points of view. He reaches the following conclusions: In a large number of cases of tuberculosis of the cecum, the disease develops in the site as a secondary localization to tuberculous lesions of the lungs. In some patients, however, the ileocecal segment seems to be the primary site of localization of tuberculosis, because lesions cannot be found clinically in other organs, though they may be found anatomically in a large number of these cases. In order to give the proper treatment, one should always determine, by means of clinical and roentgen examinations and by

laboratory tests, whether the tuberculous lesions are primary or secondary. Some clinical forms of tuberculosis may be benefited by medical treatment, though as a rule surgery is indicated. The ideal treatment is resection of the ileocecal segment. However, the coexistence of tuberculous lesions in some other organs, or the extension of the local tuberculous lesion, make it advisable to perform instead of resection other operations, such as an exploratory laparotomy, an entero-anastomosis or an intestinal exclusion, which operations give as good results as resection. Because of the diminished resistance of the patients it is advisable to perform the operation in two stages. In the first stage an intestinal exclusion (preferably unilateral) should be made as a preparatory step for the second stage or actual resection. The performance of the operation in only one stage may endanger the patient's life. Since the largest number of these patients have anatomic or clinical tuberculous lesions located elsewhere, one should give them medical treatment for some time after the operation. The lack of medical treatment as complementary treatment after the operation may be responsible for the unsatisfactory end-results of operation in some cases in which the immediate results seemed to be promising but in which complications appeared later. Among the author's cases in which the operation was performed in two stages there were no deaths. In the patients in whom the operation was done in one stage, the mortality was 20 per cent. The author cannot make as yet a definite statement on the late results of operation. In some of the patients there has not elapsed a sufficiently long period to permit one to draw conclusions. Among the patients who were operated on a long time ago, many of them did not answer the questionnaires and the rest of them answered that they were still in a satisfactory condition of health even eight years after the operation.

Archiv für klinische Chirurgie, Berlin

165: 191-388 (May 15) 1931

Experiences with the Krukenberg Hand. H. Krukenberg.—p. 191.
*Pathology and Clinical Aspects of Muscular Tumors of Gastro-Intestinal Canal. F. Klages.—p. 202.
Use of Duodenal Catheter for Treatment of Acute Gastric Paralysis and for Feeding After Stomach Operations. M. Flesch-Thebesius. —p. 220.
Forms of Osteitis Fibrosa of Jaw: Inflammatory and Blastomatous Bone Disintegration. H. Hellner.—p. 229.
Repeated Chordotomies. A. Ssoson-Jaroschewitsch.—p. 282.
Senile Changes in Human Spinal Column (with Especial Consideration of Roentgenograms). H. Junghanns.—p. 303.
*Multiple Diverticula of Small Intestine. H. Gisbertz.—p. 314.
Rare Form of Patella Partita and Its Relation to Other Diseases of Skeletal System. H. R. Paas.—p. 322.
Histogenesis of Adamantinoma. Z. W. Mankin.—p. 336.
Experimental Investigations on Osteosynthesis with Absorbable Material in Rabbits and Guinea-Pigs. E. Dahl-Iversen.—p. 345.
*In What Respect Are Biopsies on Malignant Tumors Dangerous? A. Epstein and A. Fedorejeff.—p. 357.
Influence of Various Therapeutic Methods on Arrest of Hemorrhage. V. Lopez.—p. 375.
*Ferments in Synovia and Their Significance. N. A. Podkaminsky. —p. 383.

Pathology and Clinical Aspects of Muscular Tumors of Gastro-Intestinal Canal.—Klages describes three benign myomas and two myosarcomas of the gastro-intestinal tract. Following a case report of a myoma of the lesser curvature of the stomach, which ended fatally two days after operative treatment, he gives a description of the clinical aspects of gastric myomas. Then he discusses the clinical and roentgenologic diagnosis and directs attention to the hemorrhagic tendency, which is noted also in cases of adenomatous polypi of the stomach. Further, he reports two cases of external myomas of the ileum. In a man a benign, telangiectatic, degenerated myoma of the ileum led to perforation into the abdominal cavity and caused a fatal peritonitis. A woman, who five years previously had undergone surgical treatment for an umbilical hernia, was brought to the clinic on account of an abdominal hernia the size of a fist. After the abdominal wall was opened a myoma the size of a small apple, which adhered to a loop of the small intestine, was found in the hernial sac. The author further gives a short description of the clinical picture and the pathologic changes in intestinal myoma and discusses the regressive changes in these tumors. The two cases of myosarcoma of the intestine comprised one tumor, the size of a child's head, on the lower portion of the small intestine, and one, the size of a small plum, in the rectum. The two case histories are followed by a discussion of the clinical aspects and the histology of these rare tumors.

Multiple Diverticula of Small Intestine.—After calling attention to the fact that, with the exception of Meckel's diverticulum, diverticula of the small intestine are comparatively rare, Gisbertz discusses the various theories concerning their pathogenesis. The question whether the disturbance is congenital or acquired is closely connected with the etiology. In support of the congenital nature is the fact that pancreatic tissue is often found in the diverticula. The author recalls such a case. Other authorities assume as congenital only a predisposition; namely, a weakness of the connective tissue. In addition to this there must be another factor. This may be an inflammation. Other authors mention the great frequency of spondylitis in patients with diverticula. Relations to tuberculous diseases of the intestinal canal are also mentioned by some, and others again consider cachexia as an important factor. Noninflamed diverticula frequently do not manifest disease symptoms. Only when changes develop do symptoms become manifest. The author further describes a case of his own observation. The case is noteworthy because the diverticula were demonstrated by means of a roentgenogram. The author asserts that the roentgenologic demonstration has been successful in only three other cases. The necropsy later revealed that about 300 diverticula were distributed over the entire small intestine. The patient also had pulmonary tuberculosis and was extremely emaciated. In regard to the question whether a relation existed between the pulmonary tuberculosis and the diverticula and whether the emaciation was the cause or the result of the diverticula, the author states that he does not consider the tuberculosis as the only cause but he thinks that the concurrence of several factors was necessary.

Are Biopsies on Malignant Tumors Dangerous?—Epstein and Fedorejeff point out that occasionally there are reports about injurious results of biopsies. The complications that may result from a biopsy are infection, hemorrhage or more rapid growth of the tumor. However, there is no report that indicates the percentage of these cases to the total number of biopsies. For this reason the authors made careful observations on a large number of patients in whom biopsy had been done in the oncologic institute in Leningrad and also reviewed the literature on the complications resulting from biopsy. On the basis of these studies they reach the following conclusions: 1. Complications following carefully performed biopsies are exceptional. 2. Sarcomas seem to react to a biopsy with accelerated growth more often than cancers. 3. In order to avoid complications following biopsies, a radical operation, electrocoagulation or chemical cauterization should follow immediately. Irradiations may be begun before the biopsy, and, following it they should be either resumed immediately or discontinued. 4. In cases of nonulcerated tumors that are covered with normal skin, regional lymph nodes that appear to be involved may be totally extirpated. 5. If such lymph nodes are not present, or in the case of the mucous membranes, the biopsy should be done with the diathermy loop. 6. In tumors of the mammae, biopsy as an independent intervention should be avoided. As the first step in an extensive intervention it is sometimes advisable. In these cases the biopsy specimen should be examined immediately by means of the freezing microtome and after that either the mamma should be amputated or the intervention should be terminated. 7. Tumors in the form of small nodules (tongue, lips, and so on) should, for the purpose of biopsy, be removed totally within healthy tissue.

Ferments in Synovia and Their Significance.—Observations on many intra-articular fractures convinced Podkaminsky that in such cases the callus formation is extremely slow or entirely absent. The essential factor in such conditions is the penetration of the synovial fluid into the clefts and defects, and this indicates that the synovial fluid is capable of decomposing the bone tissue or of inhibiting its regeneration. In order to determine what causes this action of the synovial fluid, the author made tests and found that it contains diastase, lipase and protease but not catalase. Thus the osteochondrolytic capacity of the synovial fluid can be explained by the presence of the ferments. It is assumed that in normal, physiologic

conditions the ferments dissolve the cells that appear in the synovia as the result of the wear of the articular walls and thus bring these waste products into a resorbable form and facilitate their elimination, for the synovial membrane has a weak resorption power. Only aqueous fluids are readily absorbed by it. In pathologic conditions that are accompanied by a reduction of the alkalinity, the action of the ferments is weakened, the eliminating and absorbing capacity of the synovial membrane decreases, and precipitation of the colloids sets in. These conditions and the insufficient nutrition of the cartilage lead to changes of the type of an osteo-arthrosis deformans. In the development of spondylitis similar processes take place in the cavity of the nucleus pulposus, which is filled with synovia, but there are certain physical and chemical peculiarities. The author concludes that the discovery of the presence of ferments in the synovial fluid might be significant in the diagnosis and therapy of various forms of arthritis.

Deutsche medizinische Wochenschrift, Berlin

57: 877-918 (May 22) 1931

Dominant Manifestations in Normal and in Abnormal Psyche. A. Herzberg.—p. 877.
High Venous Pressure in Hypertension. F. Brandt and G. Katz. —p. 879.
Critical Remarks on Roentgen Diagnosis of Gallbladder Diseases. J. Geling.—p. 881.
Iodine Metabolism of Women. W. Scheringer.—p. 883.
*Tissue Infiltration with Hypertonic Solution of Dextrose as Treatment of Choice in Muscular Rheumatism. Natannsen.—p. 885.
*Therapy of Muscular Rheumatism with Dextrose Injections. P. Happel. —p. 887.
Treatment of Pneumonia by Means of Large Quantities of Sodium Chloride. B. Hadjialilou.—p. 887.
Muscular Indurations and Their Treatment with Procaine Hydrochloride. F. Wachsmann.—p. 889.
Situs Inversus Aortae. H. J. Teschendorf.—p. 891.
Ovarian Cyst Caused by Appendicitis. A. Eckhardt.—p. 892.
Permanent Culture of Typhus Virus. K. Sato.—p. 892.
Climatophysiology. A. Loewy.—p. 893. C'td.

Tissue Infiltration with Hypertonic Solution of Dextrose in Muscular Rheumatism.—Natannsen directs attention to the fact that the so-called muscular rheumatism is really not a uniform disease but that under this term there are combined the conditions that result from ruptures of muscles, from lumbago, myositis, bruises, strain, cicatrization of muscle fibers, neuritis and other pathologic processes. Because of this varied etiology of muscular rheumatism, a causal therapy is difficult and the crusade against the disease has been extremely unsatisfactory. As the essential factor in muscular rheumatism the author considers the involvement of the sensory nerve, the pain, without which the function of the muscle would not be impaired. The pain, in turn, causes as defense reaction a tonus of the muscle, which again irritates the sensory nerve. What is primary in each case is uncertain. The aim of the treatment should be to interrupt this circle, and the author thought that this could be done most effectively by the injection of local anesthetics into the painful region. However, not entirely satisfied with the results thus obtained, he infiltrated the painful area with a larger amount of fluid, according to Schleich's method. Then he employed the mixed physical medicinal action of infiltration of large quantities of fluid with an anesthetic, similar to Lange's infiltration anesthesia of the sciatic nerve, and finally he discovered that a 10 per cent solution of dextrose, without the addition of an anesthetic, was excellently suited as a medium of infiltration. The author cannot explain the action mechanism of this therapeutic method, but he thinks that the good results are due to the combined action of osmotic, chemical and mechanical influences. Most surprising is the rapidity of the success, the pain disappearing almost instantaneously. The author gives several case reports in which the infiltration with dextrose solution was the only therapeutic method and was successful. He also obtained favorable results in several cases of neuralgia. The short relapses that were noted in some of the cases he considers as reactive manifestations, for they rapidly disappeared again. The failure of the treatment permits certain diagnostic conclusions; for instance, in a case presenting symptoms of lumbago, in which the infiltration had failed, carcinoma metastases were discovered in the lumbar vertebrae, and in other cases in which the method failed roentgenography revealed arthritis. When the indication had been correct, failures were extremely rare. In regard to the dosage the author states that from 50 to 100 cc. may be introduced into the subcutis and the muscle without danger of complications. In the cases reported he administered from 10 to 60 cc. The treatment is, of course, contraindicated in patients with diabetes. This report on the efficacy of infiltrations with solution of dextrose in muscular rheumatism is based on five years' experience.

Therapy of Muscular Rheumatism with Injections of Dextrose.—Happel has employed Natannsen's infiltration with solution of dextrose for treatment of muscular rheumatism for more than six months. He likewise noted favorable results. In most cases, one infiltration was sufficient to effect freedom from pain and removal of the functional inhibition. In some instances, one or two repetitions of the injections were necessary. The author emphasizes that the infiltrations with the dextrose solutions are not only more effective but also less painful than either those with procaine hydrochloride or those with solution of sodium chloride. He recommends this treatment.

Münchener medizinische Wochenschrift, Munich

78: 861-902 (May 22) 1931

Placenta as Incretory Organ and Its Biologic and Pathologic Effects on Female Organism. L. Seitz.—p. 861.
Sterile Catgut. J. von Khreninger-Guggenberger.—p. 865.
Prepartal Selection of Obstetric Cases. M. Hirsch.—p. 870.
Prophylactic Sterilization During Cesarean Section Not Justified. F. Krauss.—p. 872.
Curettage in Extra-Uterine Pregnancy. F. G. Dietel.—p. 873.
*Treatment and Prognosis of Diffuse Puerperal Peritonitis Post Abortum. W. von Rehren.—p. 874.
New Methods for Treatment of Collapse. E. Holzbach and E. Kottlors. —p. 875.
Progress in Border Sphere of Nervous and Gynecologic Diseases. L. Ballin.—p. 878.
Improvement of General Physical Condition of Persons Selected Inside a Pure Line. W. Cimbal and H. Schmalfuss.—p. 879. C'cn.
Most Important Displacements of Female Genitalia. E. Vogt.—p. 882.
Rectal Application of Ergot. F. Jaeger.—p. 887.

Treatment and Prognosis of Diffuse Puerperal Peritonitis Post Abortum.—According to von Rehren, diffuse puerperal peritonitis is one of the most serious complications of septic abortion. Most therapeutic measures have been ineffective, so that the prognosis has been generally considered as unfavorable. Only in recent years has surgical treatment as advocated by Engelmann improved the prognosis. Of sixty-seven patients with postabortum peritonitis, twenty-six, or about 39 per cent, could be saved. These favorable results are to be attributed not only to the early recognition and prompt surgical treatment of the peritonitis but also to the use of the operative method of Engelmann, who avoids radical interventions, such as manipulation of the intestines, palpation of the organs of the small pelvis, and also irrigations of the abdominal cavity, which involve the danger of dissemination of bacteria. He opens the Douglas pouch from several sides in order to facilitate the discharge of the exudate. Von Rehren found that mere drainage of the Douglas pouch is not sufficient, because intestines or the puerperal uterus may cause stoppage of the drain, and the peritonitis may spread upward. In all patients with postpartum peritonitis whom the author was able to cure he did not limit himself to drainage of the Douglas pouch but he also performed laparotomy and drained the Douglas pouch on both sides by means of Dreesmann tubes inserted through pararectus flank incisions. The postoperative course was in most cases prolonged and complicated. The average duration was three months. In the conclusion the author stresses the significance of early recognition and operation. Even when peritonitis is only suspected, drainage of the Douglas pouch and laparotomy should be done. An empty Douglas pouch does not indicate the absence of diffuse peritonitis. In cases that appear hopeless, surgical treatment should be resorted to because with it one can save many of these patients.

78: 903-944 (May 29) 1931

Changes in Calcium Content of Skin Produced by Application of Certain Chemicals. H. von Baeyer and O. Dittmar.—p. 903.
Amputation of Lower Extremities: Prosthesis. P. Jottkowitz.—p. 904.
*Variability of Virulence of Tubercle Bacilli. H. J. Tiedemann.—p 908.
Old, Artificially Produced Phlegmon as Focus of Latent Infection. A. B. Frenkel.—p. 909.
Most Important Displacements of Female Genitalia. E. Vogt.—p. 910.
Technic of Pneumothorax Treatment. W. Hildebrandt.—p. 913.
Causes and Development of Chronic Constipation. H. Wantoch.—p. 913.

Variability of Virulence of Tubercle Bacilli.—Tiedemann states that the virulence of tubercle bacilli is not always fixed. By long continued, systematic passages in culture mediums the virulence of some strains can be reduced. Glycerin-potato mediums as well as glycerin-bile-potato mediums have been found helpful to accomplish this. It has also been done by rapid repeated inoculations of extremely young cultures in fluid mediums. By longer continued animal passages the virulence of certain strains of tubercle bacilli can be increased, but not always with regularity. Subcutaneous inoculations seem to be least suited for this purpose. Most successful are intratesticular and intraperitoneal passages. Whether the virulence of acid-fast saprophytes can be increased by animal passages is still being discussed.

Zeitschrift für klinische Medizin, Berlin

116: 583-838 (May 18) 1931

Circulatory Action in Exophthalmic Goiter and in Myxedema. H. W. Bansi and G. Groscurth.—p. 583.
*Carbon Dioxide Content of Arterial Blood. K. Hitzenberger and F. Tuchfeld.—p. 603.
Metabolism in Slight and in Severe Muscular Exertion: Causes of Increase of Oxygen Consumption in Maximal Intensity of Exertion. H. Herxheimer and R. Kost.—p. 609.
*Endonasal Application of Insulin. S. Horwitz.—p. 622.
Twin Pathology. H. Glatzel.—p. 632.
Relation of Obesity to Arterial Hypertension, to Diabetes Mellitus and to Cholelithiasis. B. Aschner.—p. 669.
Disintegration of Blood in Hemolytic Icterus. K. Paschkis.—p. 680.
Colloidosmotic Pressure of Blood. P. Meyer.—p. 687.
Aleukia Haemorrhagica (Frank). K. Thums.—p. 697.
Influence of Epinephrine on Cholesterol Metabolism and on Cholesterol Ester Metabolism of Blood in Comparison to Blood Pressure and Blood Sugar Content. K. Guggenheim.—p. 717.
Determination of Indican and of Xanthoprotein Reaction in Blood as Functional Test of Kidneys. K. Zamyslowa.—p. 732.
Control of Digitalis Therapy by Electrocardiogram. F. Grünbaum. —p. 746.
Favorable Course of Endocarditic Valvular Defects. C. K. Friedberg and T. Tartakower.—p. 759.
*Reaction of Arterial Blood in Gastric and Duodenal Ulcer and Its Modification by Alkali Therapy. E. Hausner and S. Reicher.—p. 804.
Roentgen Picture and Differential Diagnosis of Pneumonia. K. Kriegel. —p. 815.

Carbon Dioxide Content of Arterial Blood.—Hitzenberger and Tuchfeld first compare the results of their determinations of the carbon dioxide content of normal arterial blood with those of other authors, and then they report studies on the carbon dioxide content of the blood of patients with anemia and of patients with erythremia. They noted considerable deviation. Their results are summed up as follows: They found as the normal average of the arterial carbon dioxide tension 39.5 mm., of the arterial carbon dioxide content 46.6 per cent by volume of carbon dioxide, of the venous carbon dioxide content 51.2 per cent by volume, of the arteriovenous difference 4.6 per cent by volume. In anemias (pernicious and secondary) the carbon dioxide tension is reduced (31.3 mm.), the arterial carbon dioxide content is increased (52.3 per cent by volume) and the arteriovenous difference is reduced (2.3 or 2.9 per cent by volume). During the remissions in anemia the carbon dioxide values are normal. In erythremia the opposite is noted: high tension (45 mm.), low content (39.3 per cent by volume) and large arterial venous difference (6.45 per cent by volume). During the erythremia in gastric and duodenal ulcers, with the high carbon dioxide tension there is nevertheless a normal carbon dioxide content of the arterial blood.

Endonasal Application of Insulin.—The fact that the hypophyseal hormone, which influences the water exchange, is effective by endonasal application induced Horwitz to investigate whether insulin would be effective when administered in this manner. In experiments on healthy persons and on diabetic patients it was found that insulin either sprayed or snuffed into the nasal cavity is resorbed by the nasal mucous membrane and reduces the blood sugar content. However, this action is not as constant as in subcutaneous administration; for whereas patients that are refractory to subcutaneous injections of insulin are extremely rare, in endonasal application about one third of the examined persons, normal as well as diabetic, were refractory. It was also found that in endonasal application large doses of insulin had no more intensive action on the blood sugar than small doses (from 10 to 15 units). Hypoglycemic manifestations were not observed following endonasal application. The tolerance for carbohydrates was increased by the endonasal application of insulin only in some of the cases of slight and of medium severity. The author therefore recommends endonasal insulin therapy for suitable cases.

Reaction of Arterial Blood in Gastric and Duodenal Ulcer.—The case histories reported by Hausner and Reicher of patients with gastric and duodenal ulcers, in whom the gastric juice showed hyperacidity, indicate that there is not an abnormal acid reaction of the arterial blood, and that the p_H values are within the physiologic limits. These observations, like those of several other authors, contradict Balint's theory, which considers the displacement of the acid-base equilibrium toward the acid side as the cause of gastric and duodenal ulcers. However, the authors emphasize that they are referring to the reaction of the blood and not to an eventual tissue acidosis. They found the influence of alkali therapy to be the same in normal persons and in persons with gastric ulcer: the p_H is displaced toward the alkaline side, but within physiologic limits. An alkalosis was never observed, even when there were manifestations of intoxication. In the therapy with calcium carbonate and magnesium oxide administered every two hours, intoxications were not noted. Only medication with sodium bicarbonate in daily doses of 50 Gm. caused symptoms of intoxication, such as anorexia, headaches and nausea. The authors point out that the objection could be made that the patients they observed, in spite of the fact that the p_H was within physiologic limits, had a relative acidosis, that is, that their p_H values without the ulcer disease might have been higher, and that the alkalization effected a return to normal values. However, it appears unreasonable to assume this for all the cases that were studied. The mechanism, by which the displacement toward the alkaline side was effected, varied: either the carbon dioxide tension was reduced and the carbon dioxide combining power remained the same (gaseous alkalosis), or the carbon dioxide tension decreased and the carbon dioxide binding power increased (nongaseous alkalosis).

Zentralblatt für Chirurgie, Leipzig

58: 1361-1424 (May 30) 1931

*New Plastic Operation on Medial Articular Ligament of Foot. F. Loeffler.—p. 1362.
Active Treatment of Nontuberculous, Closed, Spontaneous Pneumothorax. P. Esau.—p. 1365.
Improvement of Adhesive Tape Extension Bandages. C. Bauer.—p. 1371.
Several Recurrences of Necrosis of Pancreas. A. Balog.—p. 1372.
Hemorrhagic Necrosis and Rupture of Spleen with Fatal Hemorrhage into Abdominal Cavity Resulting from Thrombosis of Aneurysm of Splenic Artery. P. Boecker.—p. 1375.
Plastic Operation for Inguinal Hernia. S. Bäcker.—p. 1377.
Acute Osteomyelitis of Atlas. J. Hörmann.—p. 1379.
Thrombosis of Vena Axillaris. J. Wulsten.—p. 1383.

Plastic Operation for Correction of Flat Foot.—Loeffler, after reviewing the various treatments that have been recommended for strengthening the medial, overstretched, articular ligament in persons with movable incomplete flat foot, reports his own method. His procedure is a modification of Katzenstein's method, in which a free transplanted periosteal flap is used as a substitute for the weak articular ligament. But since it is difficult to keep a free transplanted periosteal flap under great tension and to fasten it securely to the leg and to the foot, the author reasoned that considerable traction could be exerted if at the one end the flap remained in connection with its underlying bone. For this reason he lifted a flap of periosteum from the medial surface of the tibia, but where it is securely attached to the medial malleolus and withstands considerable traction; it is left attached and turned downward, so that the side that has been attached to the bone now is turned outward. Under strong traction this flap is then attached to the os calcis, but before this is done the medial articular ligament apparatus (articular capsule and ligaments) is drawn together somewhat by several sutures. Over this the periosteal flap is turned downward. After the flap is fastened to the os calcis, two silk sutures are inserted where the flap is turned down. By these sutures the tension of the flap can be increased still more and an eventual further tearing of the flap is prevented. Following the operation the foot is fixed in the corrected position by a plaster-of-paris cast, which is left on for four weeks. The

author employed this method successfully on several children and adults. The first patients were treated more than two years ago, and relapses have not been observed.

Vrachebnaya Gazeta, Leningrad

No. 6: 405-482 (March 31) 1931

*Antagonists of Tuberculosis. N. D. Strajesko.—p. 409.
Rheumatism: Clinical Problems. L. B. Buchshtab.—p. 417.
*Bacillary Immunity in Diphtheria. E. J. Gen and L. J. Tchertkov. —p. 422.
*Pylorospasm Caused by Tuberculous Bronchadenitis. M. M. Pismarev. —p. 425.
*Auricular Fibrillation. G. J. Katz.—p. 430.
*Renal Diabetes. B. N. Rubinstein.—p. 433.
*Antivirus in Treatment of Skin Diseases. M. B. Potashnik.—p. 436.

Antagonists of Tuberculosis.—Strajesko studied the question of interrelation between the heart and pulmonary tuberculosis. He states that there is no natural immunity against tuberculosis; there is only an acquired immunity, which depends not on the endogenous factors but largely on the exogenous ones: surroundings, climate, profession (trade, occupation) and nutrition. In various patients the tuberculous process runs a different and polymorphous course, which depends on the particularities of the diseased organism. The author cites Rokitansky's axiom of 1845 that cardiac lesions and pulmonary tuberculosis are absolute antagonists. He reviews the complete discussion on the subject, which was protracted for almost a century. The French author Tripier presented his so-called law that interprets in such a way the question of inconsistency that the antagonism should be understood not as an absolute inconsistency between the diseases of the heart and lungs but only as a condition of an influence of a diseased heart on the evolution of the tuberculous process. The author studied necropsies performed in 1,961 cases of pulmonary tuberculosis. From this number there were seventy-one cardiac cases, i. e., on the average the coincidence of pulmonary tuberculosis with endocarditis was encountered in 3.1 per cent of the cases of pulmonary tuberculosis; in 522 heart cases the incidence of pulmonary tuberculosis was 13.6 per cent. This clearly demonstrates the unsoundness of Rokitansky's law on the absolute antagonism between cardiac and tuberculous cases. The author agrees with most of the investigators who studied this problem that, in the majority of cases, cardiac disorders preceded the appearance of pulmonary symptoms. However, the author's observations in nineteen cases in which there occurred a coincidence of pulmonary tuberculosis and cardiac conditions confirms the law of Tripier that cardiac disturbances, especially those accompanied by pulmonary stasis, retard the progress of pulmonary tuberculosis. The author states that there are no absolute antagonists of pulmonary tuberculosis. One can only observe clinically such pathologic conditions that retard the tuberculous process by sclerosing and limiting its extension as well as by the formation in a much shorter period of a more permanent antituberculous immunity. The main tuberculous antagonist, it seems, is the physiologic power of the body's active mesenchyme; it is up to the mesenchyme of tuberculous persons to produce cellular as well as humoral immunity.

Bacillary Immunity in Diphtheria.—Gen and Tchertkov state that their main endeavor was to find an explanation of why so many children actively immunized against diphtheria have, nevertheless, developed the most severe diphtheria. They experimented on fifteen guinea-pigs for a period of a month and a half. Their conclusions are as follows: The immunization of guinea-pigs by killed diphtheria bacilli does not produce in the animals an antibacterial immunity to a subsequent infection with living diphtheria bacilli. Hence there is enough evidence that the addition of killed diphtheria bacilli to the pure toxin vaccines extensively employed at present for the purpose of producing an active immunity in children does not change the nature of the immunity, because the killed bodies do not produce antibodies either against diphtheria toxins or against living cultures of diphtheria bacilli.

Pylorospasm.—Pismarev reports two cases of pylorospasm that was caused by tuberculous bronchadenitis. He reviews the literature on the subject and draws the following conclusions: 1. Tuberculous bronchadenitis and periadenitis are often the causes of inhibition of the vagosympaticus in the mediastinum, whereby a disorder is provoked in the motor functioning of the stomach. 2. Disorder of the motor functioning of the stomach, caused by stenosis and pylorospasm, leads to food stasis as well as to various painful complaints of gastrogenic nature. 3. Hausman's test with compound solution of iodine is the only method for the discovery of an early stenosis of the pylorus. 4. If the diagnosis of an early pyloric stenosis is possible only with the Hausman test, the determination of its pylorospastic character will be much easier with the aid of gastric lavages.

Auricular Fibrillation.—Katz observed forty cases of auricular fibrillation. He states that with absolute rest and quinidine therapy he obtained favorable results in 75 per cent of his patients. The remaining 25 per cent demonstrated a considerable resistance to all the therapeutic measures employed. The author explains this in the following way: 1. The persistent cases are not always accompanied by decompensation; it seems that they are independent and not related either to the nature of the anatomic changes or to the degree of their extension. 2. In some instances these cases occur only in patients in whom auricular fibrillation and endocarditis are of a recent origin. They are probably caused by the severe functional disorders of the heart muscle and by the exhaustion of its reserve power. The author describes two such cases and on the basis of all the material collected reaches the following conclusions: 1. The nature of anatomic changes and the degree of their extension have in no way any significance in the prognosis of auricular fibrillation. 2. The prognosis in recent cases is occasionally worse than in the advanced ones. 3. The prognosis depends entirely on the degree and amount of functional disorder of the heart muscle. 4. The prognosis is poor if after the decompensation is alleviated the fibrillation is not influenced by rest and quinidine therapy.

Renal Diabetes.—Rubinstein reports a case of renal diabetes that developed after a few attacks of renal colic. Repeated laboratory examinations have shown a moderate glycosuria with normal blood sugar content; the glycosuria was in no relation to the kind of food eaten and the disease during the whole period of six months ran a course without any apparent disorders. The author concludes as follows: There is no direct causal relationship between glycosuria and renal colic, despite the fact that the former is usually revealed immediately after an attack of renal colic. Their relationship is of an entirely different nature that is in some connection with the constitutional characteristics of the diseased person. These characteristics are not as yet easily recognized; however, they are the only ones that may be used in the interpretation of the colic as well as of the consequent glycosuria. The pathogenesis of renal diabetes is still obscure. In every new case one should study not only the constitutional characteristics of the patient but also his sympathetic nervous system. The mode of treatment of renal diabetes has no limitations in diet as is necessary in diabetes mellitus. The diet for a patient should be outlined with regard to the conditions of his other systems. Insulin therapy is not useless but often dangerous because of a threatened insulinemia.

Antivirus in Treatment of Skin Diseases.—Potashnik used antivirus prepared according to the method of Besredka on thirty-one patients with various cutaneous conditions. His conclusions are as follows: 1. In sycosis, antivirus prepared according to the method of Besredka gives most favorable results. 2. In furunculosis the treatment with antivirus rapidly diminishes the pain, shortens the duration of the process and results in complete recovery. 3. In cases of chronic eczema, antivirus has no action whatever; it does not possess any advantages in comparison with other therapeutic agents that are used in the treatment of acute eczema. 4. In the treatment of chancroid, antivirus produces good therapeutic effect with rapid improvement and consequent complete cure. 5. The antivirus therapy is not specific since the nonspecific filtrates from various culture (staphylococci, pneumococci, streptococci, *Bacterium coli-communis, Bacterium typhosum* and *Spirillum choleraeasiaticae* present, in general, results similar to the specific ones. 6. It is not necessary to prepare for different cases specific filtrates because if there is in reserve any one of the filtrates one can begin the treatment immediately; it was proved also that there is no difference in the value of freshly prepared and of old filtrates.

Nederlandsch Maandschrift voor Geneeskunde, Leyden

17: 551-610, 1931

Clinician and Pathologist-Anatomist. C. de Lange.—p. 551.
*Treatment in Infantile Spastic Diplegia. R. J. Harrenstein.—p. 568.
Paralysis of Left Side of Diaphragm in Tuberculosis of Bronchial Lymph Nodes. G. U. Huët.—p. 578.
Gastric Hemorrhages in Children. E. Gorter.—p. 581.
Foreign Bodies in Trachea. J. Slooff.—p. 592.
Midwifery: A Survey of Literature of 1930. G. H. van Waasbergen. —p. 594.

Treatment in Infantile Spastic Diplegia.—Harrenstein discusses his experiences in the treatment of twenty children with spastic diplegia, or bilateral paralysis. These children were suffering from the effects of various encephalopathies. Many of them revealed serious disturbances in their mental development. Defective development of the pyramidal paths, often associated with Little's disease, was, however, not present in this group of cases. Premature birth was to be incriminated as a cause, as eight of the twenty children were born from one to two and one-half months before term. The spastic condition of the muscles, which characterizes Little's disease, is found chiefly in the legs and only in the worst cases in the arms, too. Little's disease is not difficult to diagnose when the syndrome is fully developed. It is not so easy, however, to recognize the first manifestations of the disease in infants. The spastic condition of the muscles develops usually successively in various muscle groups and not always in the same order. Adductor spasms may be present in infants, so that the limited spreading of the legs causes the mother trouble in diapering the child, although the feet are still normal in their movements. A short orthopedic-surgical treatment, without long after-treatment in a convalescent's home, will give satisfactory results in half the cases, as far as learning to walk is concerned. The bad results occurred chiefly in children with serious disturbances in their mental development. Special difficulties arise when, through the spreading of the process, also the upper extremities become spastic. Serious disturbances of the sense of equilibrium may hinder a successful outcome of treatment. In some cases treatment brings no improvement—often because of retarded mental development. It is often difficult to decide what cases are hopeless. Each case must be judged by itself. It must be remembered that, in children with mental defects, development of a sense of caution is necessary, since otherwise the child will endanger himself and others.

Acta Dermato-Venereologica, Stockholm

12: 1-104 (April) 1931

*Contribution to Knowledge of Bakers' Eczema (Bakers' Itch). N. C. van Vonno.—p. 1.
*Roentgenography in Strictures of Urethra. B. Petscherski, F. Strokov and I. Schischov.—p. 23.
Culture Method for Schizosaccharomyces Hominis. T. Benedek.—p. 38.
*Endogenous Dermatoses and Significance of Sympathetic Hormonal Processes in Organism for Function of Skin. E. Pulay.—p. 81.
Erythema Chronicum Migrans: Discussion on Priority of First Report. B. Lipschütz.—p. 100.
Erythema Chronicum Migrans Afzelii: Reply to Preceding Article. S. Hellerström.—p. 103.

Bakers' Eczema.—In his discussion of bakers' eczema, van Vonno stresses his studies on the etiology of this complaint, especially his investigations on its allergic nature. He investigated whether sufferers from bakers' eczema are also subject to asthma. The results were negative, for not one of the patients with bakers' eczema had asthma. Further, the author describes the symptomatology and then reports tests on himself and on persons who volunteered for cutaneous tests. He was not able to produce the eczema either on himself or on the other persons, by means of the fluid taken from the vesicles of the eruption in a patient with bakers' eczema, nor could he transmit the eruption to other parts of the patient's own body. Repeated investigations on persons with bakers' eczema never revealed a fungus that could be considered the cause of the disease, and therefore a parasitic cause of the disease can be excluded. The author further reviews the literature on the etiology of bakers' eczema. He tested the sensitivity of bakers with and without the eczema and of other persons to extracts of various kinds of flour. These tests revealed that the handling of flour intensifies the sensitiveness of the organism to flour extracts. To verify an opinion expressed by some that a function of allergy is attributable to a substance from the suprarenals, to epinephrine, the author tested the susceptibility of persons with bakers' eczema to injected and to orally administered epinephrine preparations, but a diminished reaction was never observed. His own investigations as well as those of others convince him that some people have an idiosyncrasy to flour. He also thinks that in the bakers' trade one can acquire an allergy through a prolonged contact. Bakers' eczema is therefore an allergic dermatosis and an occupational disease, but the author thinks that cleanliness can prevent the complaint.

Roentgenography in Strictures of Urethra.—The report by Petscherski and his associates is based on 200 urethrograms and cysto-urethrograms (roentgen pictures of the bladder and entire urethra during urination). The method is a most valuable one, as a means both of diagnosing the stricture and of differentiating the various kinds of stricture (gonorrheal, traumatic and congenital), as well as for observing the changes in the portion of the urethra back of the stricture. In strictures necessitating surgical intervention, urethrography—especially cysto-urethrography—is of great value. In many cases it may determine whether such intervention should be resorted to or not; and it makes both the method and the control of the treatment easier.

Significance of Sympathetic Hormonal Processes in Organism for Function of Skin.—Pulay's researches deal with the skin as a central organ of the sympathetic system. With reference to Lewis's studies of the capillary system, he discusses various questions concerning the circulation in the tegument. Dilatation is determined by a substance producing hyperemia, contraction by hormonal influences. Hormonal deficiency creates a constitutional basis for disposition to edema. With regard to the sympathetic correlation, the important bearing of splanchnicoperipheral balance on the normal functioning of the skin is spoken of. The author summarizes the results of his own researches, during ten years, with regard to metabolism. Eczema, urticaria and psoriasis are discussed in detail. Endogenous sensitizers for eczema are shown to exist in hyperglycemia and uricacidemia. The bearing of arrested electrolysis on cutaneous reaction is also shown, and the calcium-magnesium-potassium relation is set forth in detail. Psoriasis is shown to be an enzymal disturbance. It is the expression and clinical manifestation of an oxidative-enzymal cellular process projected into the organ in which the result appears; namely, the skin. It is not a disease but a cutaneous reaction. The disposition is hereditary. Normal keratinization, as well as all irregularities of that process, are determined by enzymal action.

Ugeskrift for Læger, Copenhagen

93: 495-522 (May 7) 1931

Accident Insurance Cases: XIX. Use and Misuse of Massage. I. Collin.—p. 495.
*Treatment of Ménière's Disease: Principles and Results. D. Dederding. —p. 497.
*Splenomegalic Polycythemia Rubra Accompanied by Leukemia-Like Changes in Blood and Organs. E. Meulengracht and S. Petri. —p. 501.

Treatment of Ménière's Disease.—Dederding asserts that this disorder is caused by defective vasomotor functioning, especially in the form of a capillomotor stasis. Water retention is indicated by the frequent oliguria, also by subcutaneous infiltrates, regarded as abnormal water depots coordinated with corresponding retention processes, partly causing aural phenomena, partly the more universal extra-aural phenomena. Good results have been obtained by limitation of the water intake, together with massage, gymnastics, exercise, fresh air, Finsen light, and baths.

Splenomegalic Polycythemia Rubra Accompanied by Leukemia-Like Changes.—Meulengracht and Petri describe a case of erythrosis, erythromelalgia, excessive enlargement of the spleen, enlargement of the liver, and polycythemia combined with leukemia-like changes in the blood and pronounced metaplasia in the splenic punctate. They review the literature on cases clinically and anatomicopathologically regarded as "transition cases" between polycythemia rubra and myeloid leukosis and discuss whether these cases indicate only that two etiologically different disorders under certain conditions resemble each other so closely as to make diagnosis difficult or impossible, or whether the two disorders are etiologically related and are to be considered as different forms of the same disease.